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ORIGINAL LECTURES.

THE ETIOLOGY AND PROPHYLAXIS OF THE TUBERCULOUS DISEASES.

Being the Address in Medicine before the Medical Society of the State of Pennsylvania, at its Thirty-seventh Annual Session, held in Pittsburg, June 4, 1889.

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KNOWLEDGE, like the hard woods, is of slow growth. Auenbrugger worked seven years upon that discovery which he gave to an unheeding profession as the "Inventum Novum." Half a century later it was rescued from oblivion by Corvisart, to be extended and perfected in another quarter of a century by Piorry. Laennec had already acquired a reputation by his practice and writings, when, in 1815, he invented the stethoscope. Four years later he published his *Treatise upon Mediate Auscultation and the Diseases of the Lungs and Heart*, but almost a quarter of a century elapsed before this method of clinical investigation became popularized among medical men, and was generally taught in the schools of England and America. Jenner spent nearly twenty years in investigations and experiment before he published, in 1798, his *Enquiry* into the causes and effects of the cow-pox.

Yet each of these discoveries revolutionized that department of the art of medicine which it affected, and to-day no student is entitled to receive the degree, which marks his admission to the profession, who does not know more of percussion than Auenbrugger, at least as much of the principles which underlie auscultation as Laennec, and unless he has easily acquired the essential facts of that beneficent discovery which cost Jenner twenty years of toil.

These things were in the old days. We live, if not in an era of more impatient intellectual activity and keener inquiry, at least in a time of the infinitely more rapid dissemination of information. A flash of electricity, a turn of the press, and that which happened yesterday is known all over the civilized world. But this is news, not knowledge.

Lister's memorable introductory lecture in the University of Edinburgh on "the germ theory of putrefaction, the basis of a new mode of treatment which finds its application in all departments of practice," was delivered in the autumn of 1869. It makes a little pamphlet of twenty-two pages. The time was ripe for the principles set forth in that publication, and in others which quickly followed it. Much that had gone before led up to them. We think at once of the work of Latour, of Schwann, of Pasteur. The facts were convincing. Many of the details of Lister's early methods were, it is true, unnecessary, some were faulty; but the underlying thought was right. If not a new truth, it was certainly a new application of truth.

Nearly twenty years have elapsed, and the seed sown by Lister has grown and multiplied and brought forth an abundant harvest. The surgery of to-day stands in bright contrast to the surgery of that day. The antiseptic procedure has enormously widened its scope and increased its precision. Its capacity to relieve suffering and prolong life is abundantly enlarged. The contrast is so striking that it has become customary to speak of the art of to-day as the New Surgery.

This revolution was not brought about in a day. Listerism and the operative technique which it inspired, made for a long time slow and halting progress. Prejudices were to be overcome, old habits of thought given up, the traditions abandoned, and it was only little by little, notwithstanding the readiness of inter-communication and the eagerness for new and better things which characterize the present, that the New Surgery came into being.

Koch, who had previously published a paper entitled "Investigations into the Etiology of the Traumatic Infective Diseases," announced his discovery of the tubercle bacillus and its relation to tuberculosis in March, 1882. As an example of scientific research, this work stand unequalled in the history of medicine. Had it led to no practical results, its thoroughness, the logical sequence of the various progressive stages of the investigation, its completeness, the rigid tests to which he subjected his results, make it a model for investigators in every department of biology.

Koch demands, in order to determine whether or not a given bacterium is the cause of a certain disease, the fulfilment of the following requirements:

(*a*) The special bacterium must be present in all cases of the disease.

(*b*) It must be separated from other microörganisms, and from all matter found with it in the diseased animal.

(*c*) Thus freed from all foreign matter, it must be capable, when properly introduced, of producing the disease in healthy animals.

(*d*) The bacterium must be found properly distributed in the animal in which the disease has been induced.

Not only did he devise and elaborate the technical methods by which these rules can be carried out, but he saw that every one of the conditions was absolutely fulfiled in the investigation which he had undertaken. The proof was final; the demonstration complete. The germ theory was no longer a working hypothesis; it had become, in regard to the tuberculous diseases at least, an incontrovertible fact. So admirable was Koch's account of his investigation, that Trudeau, in the Adirondacks, with but little knowledge of microscopy and very imperfect apparatus, much of which he constructed himself, was enabled by following a translation of the original report to repeat the research step by step, and verify the results by the inoculation of pure cultures of the bacillus.

The labors of Lister had not only made the discovery of special pathogenic microörganisms possible; they had made it a necessity. There were many workers in the field; the fulness of time had come. Obermeier had already in 1873 discovered the spirillum of relapsing fever. Had it not been the tubercle bacillus, some other pathogenic bacterium would have been brought to light in its causal relationship to some specific morbid process. But to Koch is due the lasting honor of having first clearly demonstrated the part played by microörganisms in the etiology of disease, and of having thus laid the foundation of the science of bacteriology.

This discovery, modestly as it had been announced by its author, was at once heralded throughout the world and received with acclamation. Klebs, Cohnheim, and others had already, without reserve, placed tuberculosis in the group of the specific infectious diseases. To have found the infecting principle itself, or at all events the carrier of the infection, seemed a boon almost beyond comprehension. Its importance appealed to the dullest attention. The mortality statistics of pulmonary consumption are, unfortunately, too familiar. To this disease alone fifteen per cent. of all deaths are to be attributed. Add to these the deaths due to tuberculosis of other organs, of the joints, of the meninges, of the peritoneum, then swell the list by the cases cut off by intercurrent diseases or accident, and the result is simply appalling. The tuberculous diseases are not endemic the world over, they are epidemic. Consider that a large proportion of the cases are chronic, progressive, inexorably disabling, and it becomes easy to realize that this group of diseases exerts an influence upon the family and upon society that nothing but the apathy begotten of hopeless familiarity renders endurable. It is easy then to understand the enthusiasm with which Koch's discovery was received. Men thought of the maxim *Causa sublata tollitur effectus.*

The cause being now found, nothing seemed easier than that it should be dealt with, and that, as a consequence, one great scourge of the human race would become preventable, if not curable. Certainly, one of the first effects was to arouse both the professions and the people from the apathy into which they had fallen in regard to these diseases. Those who had the opportunity and training proceeded to verify and extend Koch's investigations, with the result, not only of acquiring a mass of information in regard to the life-history of the bacillus itself, and a more exact knowledge of the pathology of the tuberculous diseases, but also with the acquisition of like knowledge in regard to other bacteria, and the part played by them in the pathogenesis of many other infections.

Others turned their attention without delay to therapeutic investigations, having for their object the destruction of the tubercle bacillus. It is needless to enumerate the methods of antiseptic and germicide treatment which have been the outcome of these efforts. They are fresh in your memory. Based upon insufficient knowledge of the mode of growth and development of the tubercle bacillus in the tissues, they have one after another been tried and found wanting.

These failures have afforded an apparent justification to that contingent of the profession who, preferring darkness to light, because the light has not yet flooded all the obscure places, still refuse to recognize the etiological relationship between the tubercle bacillus and tuberculosis.

Seven years have now passed. A host of workers have collected a vast array of facts which rest upon a sure basis of truth. These facts are being sorted and placed in proper relation with each other. A critical observer sees that steady progress is being made. In surgery much has been accomplished; yet the results in the diminution and cure of the visceral tuberculous diseases are not encouraging. The growth of knowledge is slow; it is not the less sure. He does not to-day seem too sanguine who looks forward to practical results of the greatest importance, if not in the cure, at least in the prevention, of pulmonary consumption.

Some broad generalizations are already possible:

1. *Tuberculosis is a specific infectious disease.*

Its exciting cause is the tubercle bacillus. Its etiology is the natural history of that parasite. The predisposing influences are those conditions, both inherited and acquired, which favor the implantation and growth of the bacillus. Its pathology is summed up in the statement of the facts which relate to the development of the bacillus in the tissues, and the effects which it produces locally and upon the organism at large. Its diagnosis no longer depends upon the anatomical character of the lesions, but upon the presence of the tubercle bacillus and upon its inoculability.

The distinction between true tubercle and pseudo-tubercle is now perfectly clear. Both these formations are composed chiefly of lymphoid corpuscles or leucocytes. They are the result of an irritative hyperplasia. But the tubercle is the result of a chronic or persistent inflammation produced by a continuously acting irritant, and spreading by the infection of neighboring parts and by the circulation. The pseudo-tubercle may be produced by the mechanical irritation of small foreign particles. It constitutes, upon the subsidence of the active process, simply a mass of fibrous tissue, which undergoes no further change, and it remains single, being without the power of giving rise to other similar structures.

The pathological unity of the tuberculous process, whatever the tissue or organ affected, however diverse the clinical manifestations, is at once established by the double test of the presence of the bacillus and the inoculability of the disease. The relationship between the most unlike lesions subjected to these tests becomes apparent. The lung packed with tubercle or riddled with cavities owes its lesions to the same cause which produces the insignificant tuberculous wart upon the hand of the pathologist who dissects it; intestinal ulceration, hyperplasia of the mesenteric glands, peritonitis, fistula in ano, may all result from the action of a common cause.

The pathological identity of processes producing the most diverse lesions in the same organ is also shown by these tests. So-called chronic catarrhal pneumonia of the apex, gray miliary tubercle, diffuse, tuberculous, cheesy infiltration in the lungs, are dissimilar manifestations of the same pathological process. Joseph Coats maintains the view that the changes of fibroid phthisis are essentially tuberculous. The "solitary tubercle" of the brain, which is usually yellow and caseated, and may be as large as a walnut, is due to the same cause as the miliary tubercles occasionally found scattered in other parts of the brain substance and so familiar in the meninges.

A large proportion of the cases called scrofulous are now known to be tuberculous. We no longer think that scrofulous individuals are especially liable to become tuberculous, for tubercle bacilli are almost constantly found in so-called scrofulous lymph-glands, bones, and joints. After a time the local tuberculosis becomes extended or generalized.

Neelsen places tuberculosis along with enteric fever, leprosy, and syphilis in his fourth group of the germ diseases—namely, the mycoses with tissue proliferation or infected ulcers.

2. *The constitutional manifestations are not directly due to the bacilli, but to toxic principles evolved during their growth and multiplication.*

The bacteriologico-chemical researches of Hoffa, Brieger, Vaughan, and others, within the past few years, have done much to clear up the relation between the special pathogenic germs of the infectious diseases and their symptomatology. They have also rendered necessary a new definition of the infectious diseases. In the words of Vaughan and Novy, "An infectious disease arises when a specific, pathogenic microörganism, having gained admittance to the body, and having found the conditions favorable, grows and multiplies, and in so doing elaborates a chemical poison which induces its characteristic effects."

Nencki obtained upon chemical analysis of tubercle bacilli, water 88.82 per cent., solids 11.18 per cent. The solids yielded 22.7 per cent. of substances soluble in alcohol and ether, which, when used experimentally upon animals, showed the presence of a tetanizing poison. This substance has not been isolated. Bonardi demonstrated in tuberculous sputum alkaloidal organic bases, which introduced into rats and guinea-pigs rapidly produced remarkable disturbances of the nervous system. This experimenter believes that these organic bases may explain the fever, sweating, disturbances of the circulation, and other general symptoms of the disease.

The wide range of intensity in the constitutional phenomena is to be explained, only in part, by the varying reaction of different individuals to morbific agencies. It is more largely due to the extent and activity of the local process. Nor can we attribute the constitutional disturbances to suppuration associated with local tuberculous processes, as in the case of the breaking down of pulmonary infiltrations, or in joint diseases; for constitutional disturbances of the same kind, and of every degree of intensity, are developed in tuberculous meningitis, tuberculous peritonitis, and in those rapidly developing cases of consumption in which the lungs are found studded with miliary tubercle without extensive caseation or suppuration. Furthermore, decided constitutional disturbances are not infrequently associated with circumscribed lesions of insignificant extent, while enormous cavities, occupying the large portion of a lobe, are not incompatible with fair nutrition and moderate health for a period of years, in cases in which, after extensive destruction, the tuberculous process, as such, has come to an end.

Finally, the frequency with which obsolescent tuberculous lesions at the apex of a lung are found in individuals dying late in life from non-tuberculous diseases, suggests the possibility that a tuberculous process, terminating in resolution, may confer upon the individual in whom it has occurred subsequent immunity from the disease. The very lesions show that such individuals have at one period of life been susceptible, while their repeated exposure to the infecting principle during subsequent periods may be fairly assumed.

3. *Tuberculosis is directly and indirectly communicable from the affected to the healthy individual.*

In other words, it is a contagious disease. Koch has demonstrated the fact that tubercle bacilli never develop or multiply outside of the body of animals. They require for their development a constant and uniform temperature of 85° to 100°; they, however, retain their vitality for an indefinite period outside of the body and under conditions extremely unfavorable for the development of other microbes.

Cadéac and Malet found that tuberculous matter dried and pulverized was, after one hundred and two days, capable of giving rise to the disease. Schill and Fischer maintain that it only loses its virulence after six months. Pietro asserts that well-dried sputum may retain its infecting power for nine or ten months if maintained at a temperature of 77° F. Bacilli with or without spores show an equal tenacity of life. The distribution of tubercle bacilli outside of the body is, however, by no means as extensive as was formerly thought. The investigations of Cornet prove conclusively that they are to be found in greatest numbers in the immediate neighborhood of affected individuals; that they are not found in the dust collected from the abodes of individuals free from consumption, nor are they to be found in the apartments occupied by consumptives who habitually and exclusively use the spit-cup.

The experimental production of tuberculous diseases by the inoculation of sputum or other substances containing tubercle bacilli is a familiar fact. When animals thus inoculated are killed in a short time, the lesions are invariably found restricted to the point of inoculation and the neighboring lymph-glands. In view of this fact, Cornet holds that the assumption that the lungs are the seat of an especial predilection for the development of the tuberculous process is absolutely untenable, the frequency of pulmonary consumption, as compared with other forms of tuberculous disease, being due to the favorable conditions presented by the respiratory organs for the implantation of the infecting material. Numerous experimenters have shown that air passing over moist surfaces is incapable of taking up tubercle bacilli; the expired air which passes over the moist surfaces of the respiratory tract, of cavities, of collections of bacilli-containing pus or muco-pus not yet expectorated, does not carry the infecting principle, and is, therefore, incapable of communicating the disease.

Nor do the expectorated matters themselves, so long as they remain moist, comply with the conditions necessary for the communication of the disease to healthy individuals except by direct contact or inoculation. When dried, however, they are capable of dissemination through the atmosphere in the form of fine dust bearing bacilli and spores, which, being inhaled by susceptible individuals, cause the disease. Desiccation is a necessary requirement for the dissemination of tubercle bacilli and spores by means of the atmosphere, and the most favorable conditions for such dissemination are found within doors. Wet weather and a moist atmosphere are unfavorable.

The fact that the disease is most frequent in crowded quarters supports the view of dissemination by means of dried sputum. Flick, in his remarkable investigations in Philadelphia, found that ninety per cent. of infected houses had an infected house joining them, while thirty-three per cent. of the infected houses showed more than one case. These facts warrant the conclusion that consumption is communicated by contact, by association, or by living in close proximity.

Flick also found that pulmonary phthisis conformed to the laws which govern the spread of contagious diseases in other respects. The grouping of the cases is the same, and the localization is influenced by the age of those predisposed to the disease. It prevails in circumscribed epidemics, which are, however, less noticeable because the disease is of long duration, whereas the ordinary contagious diseases run their course rapidly.

From this point of view, the gradual infection of several members of a household, previously free from the disease, in the course of a few months or years after the introduction of a case, becomes intelligible. So, also, married couples infect each other; and those who nurse relatives suffer from the disease, females being more liable by reason of their closer ministration. Leibermeister has observed many cases where previously healthy families became infected one after another after removal to a house formerly occupied by a consumptive patient.

It is, however, a question of the seed and the soil. A large proportion of individuals enjoy an immunity which appears to be complete; many others, while capable of infection, show a remarkable resistance to the invasion of the tuberculous process which either undergoes resolution in the region infected or makes a tardy progress interrupted by more or less prolonged periods of quiescence. Between cases of this form and the cases called *phthisis florida*, the disease manifests every degree of intensity.

These variations in the degree of susceptibility to the disease and its development serve to explain some of the objections which have been urged with more or less force against the doctrine of the contagiousness of pulmonary consumption.

Those who assert that if consumption were contagious the human race would have rapidly become extinct, overlook the fact that a considerable number of persons in every community, especially those living outdoor lives, and those who are not brought into association with consumptives in confined apartments, are not exposed; and, secondly, the fact that a certain proportion of individuals, either by reason of the resistant power of their tissues, or of the integrity of the mucous surfaces of the air-passages, or from other causes not well understood, possess a more or less complete immunity. Those who deny the contagiousness of phthisis on account of the infrequency with which medical men, nurses, and other attendants upon consumptives are said to contract it, advance an argument which rests upon insufficient grounds. A certain proportion of individuals thus brought into habitual contact with consumptives enjoy an immunity; others while susceptible doubtless escape infection by reason of the thorough ventilation and cleanliness of well-regulated wards and sick-rooms. Physicians and attendants upon those suffering from cholera or the fevers, even in hospitals in which considerable numbers of such patients are collected, do not often contract the disease, yet who will deny that according to their special modes of transmission, cholera, enteric fever, and typhus are contagious?

Another difficulty lies in the localization of the tuberculous process in its beginning, and its tardy development, the time which elapses from the infection and the manifestation of the disease being not infrequently so long that the original exposure, even when traceable, is forgotten.

The often quoted statement of Williams in regard to the exemption of nurses and attendants in the consumptive hospital at Brompton is valueless in the light of advancing knowledge. The cleanliness and ventilation of a well-ordered hospital tend to reduce the dangers of infection. The statistics of Baer and others show a mortality in prisons that is nearly four times as great as outside, the majority of cases developing not during the earlier years of imprisonment but toward its close. The fact that more than fifty per cent. of nuns in cloisters die of tuberculosis speaks for itself.

The attendants in hospitals come and go; many of them remain in the service for short periods only. The statistics of Williams are incomplete in not showing the subsequent history of the personelle upon which they are based. On the other hand, the elaborate recent statistics of Cornet prove incontestably that attendants upon the sick show as a class an enormously increased death-rate, the increase being due to tuberculosis and other infectious diseases.

4. *It is not in the ordinary sense hereditary.*

Prior to the discovery of the tubercle bacillus, the direct transmission of tuberculosis from the parent to the child was very often assumed. The frequency with which the children of consumptive parents were affected with the disease was regarded as proof of its transmission by inheritance. Even tuberculosis developing in adult life in those previously presenting every appearance of health, was assumed to be of hereditary origin, the frequent absence of tuberculosis in the parents notwithstanding, for it was assumed that hereditary tuberculosis might skip a generation or two.

Baumgarten supports the view that congenital tuberculosis may be latent, the bacilli remaining inactive in certain tissues for years, or throughout life, unless called into activity by traumatism or other influences.

The number of cases in which tubercles have been actually found in the fœtus is very small. The view that congenital tuberculosis may be due to the semen or ovum, is a pure hypothesis unsupported by proof. The opinion that it may be derived from the maternal blood by way of the placenta, rests upon a small number of positive facts. Malvoz found that microörganisms may pass the placenta only when it is diseased. Charrin found in a seven and a half months fœtus of a tuberculous woman, which died three days after birth, tuberculous lesions of the abdominal organs. Merkel discovered cheesy nodules in the palatine arch, the lymph-glands, and in the neighborhood of the hip-joint, but not in the lungs of a child of a tuberculous woman, which died directly after birth.

Should the view held by Baumgarten be proved, it will explain the presence of tubercle in the lymph-glands, bones, and marrow, and the occurrence of tuberculous meningitis, which is so common in young children. Even in very young children, the primary infection fre-

quently takes place by way of the lungs, a fact fully in accord with what is now known of the mode of contagion, the relation between the mother or nurse and the young baby affording the fullest opportunity for the communication of the disease.

The conclusion that enteric fever or scarlet fever is hereditary, would rest upon very nearly the same basis of fact upon which the doctrine of the hereditary transmission of tuberculosis has been assumed, namely, that the parents of those having the sediseases had previously suffered from them, and that, in a few rare instances, the child of an infected mother has shown the characteristic signs at birth.

In regard to the hereditary transmission of tuberculosis among the domestic animals, the statistics of the Berlin abattoir are not without interest. Among 320,000 calves, 17 were tuberculous; whereas, among 398,000 cattle, there were no less than 8000 tuberculous.

5. *A rational, scientific prophylaxis is practicable both as regards individuals and communities.*

The part played by heredity in direct distribution and propagation of the tuberculous diseases is insignificant as compared with the influence of contagion. The few children born of tuberculous parents have died promptly; those who develop the disease in infancy, die early in life; the infected children of tuberculous parents who reach adult age, are those who long suffer only from tuberculous diseases of the lymph-glands and the bones, and are not, in the absence of pulmonary lesions, likely to disseminate the infecting material.

The chief avenues of infection are the digestive and respiratory tracts. The disease is acquired by infected food, and by the inhalation of air containing tubercle bacilli and spores; other methods of invasion are infrequent and relatively unimportant.

The only sources of the infecting material are those discharges from the bodies of infected human beings and domestic animals which contain the tubercle bacilli and their spores. Of these, the chief are cow's milk used as food, and the matters expectorated by patients suffering from pulmonary phthisis, which is not likely to infect unless dried and inhaled as dust. The flesh of tuberculous cattle does not cause tuberculous diseases in those who partake of it; there is, in fact, no case on record of the communication of the disease by these means. The liability of its communication by milk is increased where there is tuberculous inflammation of the udders of the cows. It is important, therefore, that all milk used as the food of infants should be sterilized by boiling, and until used it should be kept protected from the atmosphere.

The infection by way of the intestinal tract, frequent as it is, especially in childhood, is notably less common than infection by way of the respiratory surfaces.

As Cornet has shown, the only effectual prophylaxis is in the proper care of the sputum. In this respect tuberculosis presents a strong analogy to enteric fever, of which it has been said, "that measures of prophylaxis will be efficient in proportion to the strength of our belief in the material nature of the typhoid poison, and in the possibility of destroying it or preventing its spread." It is the duty of the physician to see to it that no case of infectious disease under his care becomes a focus of contagion. In enteric fever we have long recognized a disease in which this rule can be effectively carried out by means of the disinfection of the stools. It is evident that in pulmonary phthisis we must follow the same principle of prophylaxis, the one efficient procedure being the proper disposition of the bacilli-laden expectoration.

The difficulties in the practical application of this rule lie, on the one hand, in the chronic nature of a large proportion of the cases of the disease, and, on the other, in the deeply rooted prejudices or indifference of patients in regard to the matter. Cornet has formulated the rule that a phthisical patient should never under any circumstances expectorate on the floor or in a handkerchief, but always in a spitcup; this is the one thing needful. The cup should contain a little water, and be frequently emptied into the sewer, where the contents sooner or later undergo destruction, or at all events pass beyond the reach of inhalation by man. The cup should be frequently washed with boiling water. A cup has recently been devised, and is sold in the shops in this country, which consists of a small metal frame in which a folded paper cup is set; when a quantity of sputum has accumulated, the paper may be removed and burned with its contents.

The floor should be sprinkled with water before sweeping, and the sweepings destroyed by burning. The clothing and bedding of tuberculous patients should be disinfected by prolonged boiling. The walls of apartments occupied by patients should be frequently rubbed down with bread, which may then be burned. Carpets and curtains should be shaken in the open air at a distance from houses, and exposed at intervals to the air and sun.

The acceptance and universal practice of prophylactic measures would warrant the hope that the prevalence of pulmonary consumption will diminish, as have the septic diseases following surgical operations and puerperal fever, under a rational prophylaxis.

Such a result is not only theoretically possible; its accomplishment in the course of time is, in a high degree, probable. This hope has the support of strong analogies in the records of the past; the great scourges of mankind have prevailed during more or less extended historical epochs, and then passed away. The plague which ravaged all parts of Europe during the Middle Ages, which depopulated villages and laid waste districts, which, in the form of the black death, swept over Europe in the fourteenth century, and destroped in three years twenty-five millions of inhabitants, disappeared from England with the great outbreak of 1665. Only twice during the present century has this pest shown itself in Western Europe. The disappearance of the plague was probably due to the conjoint influence of a rigorous quarantine and altered methods of living. It has been said in regard to Europe, that when the shirt came in, the plague went out.

Typhus, which devastated Europe from the fifteenth century until the end of the first quarter of the present century, of which Murchison says, "A complete history of typhus would be the history of Europe for the last three and a half centuries," has almost burnt itself out. Here and there in the seaport cities of Great Britain it still smoulders, but in the great modern campaigns of the American War and the Franco-Prussian War typhus fever was unknown. Its disappearance is unquestionably due to that prophylaxis which comes of a clear knowledge of its causes, and to the improved hygiene of modern life.

Leprosy was for thirteen centuries endemic in Great Britain; cases were still in existence on the borders of Scotland toward the close of the last century. To-day no indigenous case is to be found within the British Isles.

Smallpox was for centuries one of the greatest scourges of mankind. Scarcely a decade passed in which the disease, sweeping over great areas, did not decimate the inhabitants of one country or another. To-day we have no dread of it beyond the fear lest prolonged and complete immunity may beget neglect of the precautions which protect us.

The discovery of the tubercle bacillus has not been without practical results. Without it these generalizations were impossible. It has given us, in place of obscurity, confusion, uncertainty in regard to pulmonary consumption and the other tuberculous diseases, a positive etiology, a clear pathology, a rational therapeutics, a hopeful prophylaxis. These are great gains at the end of seven years.

But it has done more than this. It has pointed out the direction of future work, and indicated possibilities never before dreamt of. The news of Koch's discovery burst upon the world like a flash that grew faint, leaving the eyes dazzled. The knowledge which Koch has given us is like the dawn, which steadily grows brighter and brighter, until the clear day shows the perfect truth.

How shall we fitly characterize those rare men who, by sheer intellectual force, have found and given to their fellowmen new truths? By what metaphor shall we make their greatness plain? They are bright stars—suns—in the intellectual firmament, in the steady light of whose genius the work of mankind may be carried on as in the open day. I speak not of science in general, nor for the other sciences, but in medicine a century has given us five—that son of France, dead at thirty-one, whose philosophic mind conceived those generalizations which laid the foundation, not only for modern physiology, but for modern biology; that German, no longer young, to whom nothing human is without interest, busy in the affairs of men to-day as always, both in science and in politics, whose labors laid the foundation for the science of modern pathology; that Englishman, to whose clear insight mankind for nearly a century past, and for all time to come, owes the incalculable boon of deliverance from smallpox; that other Englishman, who to-day lives to see in the result of his labors the new surgery; and, lastly, him to whom we owe that discovery upon which rests the young science of bacteriology—they are called—names never to be forgotten!—Bichat, Virchow, Jenner, Lister, Koch.

ORIGINAL ARTICLES.

LAPAROTOMY FOR PERFORATING TYPHOID ULCER.

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THE following case is reported as an addition to the as yet meagre statistics of laparotomy for perforating typhoid ulcer.

C. H., male, aged twenty-two, admitted into Milwaukee Hospital March 31, 1889.

History.—Patient has been under treatment for the past three weeks for extensive bronchitis. He was never confined to his bed, but came to my office two or three times during the above period. His temperature was never over 101° F. There was complete loss of appetite, but no symptoms pointing to intestinal disturbance. March 31st, visited at his home. Three days ago he had an acute attack of pain in the left iliac region, followed immediately by vomiting, which has since then continued and has latterly become stercoraceous. During this time there has been absolute constipation notwithstanding repeated doses of castor-oil, administered by his friends, which only aggravated his symptoms. Abdomen was found very tense, tympanitic throughout except over the left iliac region, where dulness was present and exceedingly tender on pressure. Liver dulness displaced upward. Patient collapsed, pale, and pulse 140. Stimulants per rectum ordered.

Probable diagnosis, volvulus with obstruction.

March 31. He was removed to the Milwaukee Hospital for laparotomy. Vomiting still continues, and in addition to the symptoms of yesterday a cracked-pot resonance, on percussion to the right of the area of dulness. Considerable fecal-colored fluid removed from stomach by siphon irrigation. Stomach irrigated with one-third per cent. solution of salicylic acid. Two ounces of brandy administered by rectal injection and one-one-hundred-and-twentieth grain of sulphate of atropia hypodermically. Chloroform as anæsthetic on account of the bronchitis. Temperature of operating room 90° F. Abdomen opened by a median incision, four inches in length, extending downward from one inch below the umbilicus (subsequently enlarged upward four inches). The livid, overdistended intestines immediately bulged into the incision at points covered with plastic lymph. Manual exploration of abdomen with negative result. Evisceration necessary to determine the seat of obstruction, during which the bowels were caught in and kept covered by warm aseptic compresses. A number of loops of the upper portion of the ileum were found enlarged twice the size of the remaining portion of distended intestine, rotated on the mesenteric axis one complete turn from left to right. Volvulus corrected.

Below this point the intestine was found overdistended, and while withdrawing for examination, fluid feces escaped through the abdominal incision with a sudden gush, coming from the left iliac fossa and in quantity about one pint. Intestinal loops showed large and thick patches of plastic lymph, especially the coils removed from the pelvis. A few minutes were spent in searching for the perforation, during which preparations were made for hydrogen gas insufflation for the purpose of locating the perforation. A leakage was accidentally discovered taking place through a small perforation in the centre of a large membranous patch at a point six inches above the ileo-cæcal valve. The opening was located on the convex side of the bowel nearly opposite the mesenteric attachment, surrounded by

a gangrenous patch, oval in shape and irregular in outline, one-half inch in length and one-quarter inch in width. The plastic lymph was removed as completely as possible, the gangrenous portion turned inward and completely buried by eight interrupted Lembert sutures, embracing the peritoneum, muscular, and submucous coats, a procedure which narrowed the lumen of the bowel to one-half its normal size.

Examination of the intestine for some distance above and below as far as the ileo-cæcal valve revealed no additional perforations.

During the whole period that the abdominal cavity had been open, two irrigators, one on either side, were employed for flushing the abdominal cavity with a one-third of one per cent. solution of salicylic acid at the temperature of the body—the glass tips being placed alternately in the lowest part of the pelvis and lumbar regions.

On attempting to replace the intestines within the abdomen, it was found to be impossible on account of the great distention; consequently that portion involved in the volvulus was sought for and an incision made in its centre on the convex side, one inch in length, and a considerable quantity of fluid feces, but no gas, escaped. The incision only succeeded in emptying a limited portion of bowel, as all peristaltic action was completely suspended. Three feet of intestine, on either side of the incision, were completely emptied by the pouring-out process, viz., seizing the highest loop and raising it, thus pouring contents from loop to loop until the incision was reached. The same process was repeated on the other side of the incision. The bowels were now cleansed by irrigation, incision closed by interrupted Lembert sutures, after which reduction was easily accomplished.

A large curved glass drain was introduced into the most dependent point of the abdominal cavity, and the external incision closed in the usual manner with the addition of three tension sutures, extending down to, but not including, the peritoneum. The fluid remaining in the abdominal cavity was now made to escape through the drainage tube by turning the patient on his face. Antiseptic dressing applied and retained by strips of adhesive plaster embracing two-thirds of the body, covered with common cotton and bandage. Glass drain plugged with antiseptic cotton and instructions given to remove the fluid by aspiration from the drainage-tube every hour, and to wash out the tube with a physiological salt solution. Duration of operation one hour. Pulse about 160 and distinctly perceptible at the wrist.

After-treatment.—Foot of bed elevated; externally dry heat was applied, and stimulation by rectal injections of brandy. Vomiting ceased. Two evacuations of the bowels. Three hours after operation complete collapse supervened and death seven hours later.

Post-mortem twelve hours after death. Diffuse septic peritonitis. The pathological conditions indicated that the inflammation commenced in the left iliac region at a point where the perforation had taken place. The loops of intestine which constituted the volvulus were only half as large in circumference as at the time of the operation. The remaining portions of the small intestine considerably dilated and intensely congested, with here and there patches of plastic exudation. The sutures in both places where the intestine had been sewed were buried underneath a delicate layer of plastic lymph which formed quite a firm adhesion between the coaptated serous surfaces.

A few ounces of bloody serum in the cavity of the pelvis.

Liver and spleen enlarged, parenchyma softened.

On slitting the ileum open from the ileo-cæcal region upward three elliptical ulcers were found below the point of perforation. Above the perforation no gross textural changes. Mucous membrane in lower portion of ileum in a state of catarrhal inflammation.

REMARKS.—The post-mortem appearances in this case leave no doubt that notwithstanding the mildness of the febrile attack the patient suffered from genuine typhoid fever. The bronchitis was such a conspicuous symptom during life that the presence of any serious pathological changes in the intestines was not even suspected. Perforation of one of the typhoid ulcers occurred at the end of the third week of the illness and gave rise apparently at first to circumscribed peritonitis, which limited the fecal extravasation but did not prevent the extension of the septic inflammation. The symptoms of obstruction were undoubtedly due to the presence of the volvulus and to the suspension of peristalsis in that portion of the intestinal canal concerned in the septic inflammation. The volvulus was caused, without doubt, by the distention of the intestines and the arrest of peristaltic action, conditions produced by the septic peritonitis.

So far, the operative treatment of perforating typhoid ulcer has proved successful only in the case reported by Mikulicz, and in this instance there appears to exist no convincing proof of the correctness of the diagnosis in reference to the etiology of the ulcer.

This case illustrates forcibly the necessity of resorting to direct treatment of the perforation as soon as its presence can be diagnosticated, with a view of preventing the diffusion of the septic infection. If the operation is postponed until a general septic peritonitis has had time to develop, the prospects for a favorable result are almost *nil*, and under such circumstances the execution of the operation is attended by the greatest difficulties on account of the distended and paretic conditions of the intestines.

As a perforating typhoid ulcer must almost of necessity lead to a speedy fatal termination, abdominal section, suturing of the perforation, and disinfection of the abdominal cavity present themselves as urgent, and the only rational indications in the treatment of such cases.

LARYNGEAL VERTIGO.[1]

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ATTENTION was first directed to this peculiar laryngeal neurosis by Prof. Charcot, in a communication that he made to the Société de Biologie of Paris (*Comptes Rend. Soc. de Biol.*, Paris, 1876), in which were reported two cases of an undescribed neurosis to which he applied the term "laryngeal vertigo."

CASE I. was in a gouty male, aged fifty-five years, who, after a slight cough, lost consciousness without presenting the least trace of convulsion. The patient had never presented any symptom of epilepsy.

CASE II., a male, aged fifty-four years, not an epileptic, for a year had occasional attacks that originated in a feeling of titillation below the larynx, followed by a short, dry cough that culminated in loss of consciousness. The attack was of short duration, and though the face became turgid, and there were some slight convulsive movements of the head and arms, yet he never bit his tongue, nor voided his urine, nor was in the slightest way mentally confused at the end of an attack. The latter were increasing in frequency, as many as five or six a day occurring, and they might commence while he was walking in the street. An attack would not, however, occur whenever he coughed. In this case the patient experienced an indefinable vertiginous sensation, but it never resulted in falling. Examination of his throat showed a slight, granular pharyngitis; he had suffered from chronic bronchitis and emphysema for a long time. Nitrate of silver was applied to the pharynx, and bromide of potassium given internally. The patient recovered; possibly, Charcot said, by using the medicine, possibly by other causes.

Subsequently Charcot reported (*Progrès Médical*, 1879, p. 317) other cases:

CASE III.—A male, aged forty years, who suffered from asthmatic attacks. During one of these he felt a painful, burning titillation below the larynx, followed by a short cough that resulted in unconsciousness; during this he had clonic movements of the arm. An examination revealed slight roughness of the mucous membrane of the larynx.

CASE IV.—A male, aged forty-five years, who had bronchitis the previous year, followed by a permanent feeling of heat and titillation in the larynx. He would have a slight cough, culminating in vertigo. The larynx was normal.

Charcot considered that the term laryngeal vertigo might be applied to an irritation of the centripetal laryngeal nerve, just as the title Ménière's vertigo is connected with an affection of the auditory nerve in the labyrinth:

CASE V.—Gasquet (*Practitioner*, August, 1878) reported a case in a male, aged seventy years, who caught a severe cold, and subsequently had an irritation of the larynx, causing violent spasms of coughing, with urgent dyspnœa. Eventually the coughing was followed by loss of consciousness for two or three minutes; on recovering consciousness he felt giddy and confused. Under treatment the paroxysms ceased.

CASE VI.—Krishaber (*Ann. des Malad. de l' Oreille et du Larynx*, 1882, p. 12) reports a case in a male, aged thirty-two years. He uses the term "ictus larynge," and considers it due not only to spasm of the glottis, but also to arrest of the diaphragm.

CASE VII.—Landon Carter Gray (*Amer. Journal of Neurol. and Psych.*, 1882, p. 588) reported a case in a male, aged fifty-five years, in whom the same symptoms were presented as in the foregoing case. In this case, however, the patient had been wounded by a bullet, in 1863, and during his convalescence he had epileptiform seizures, with loss of consciousness, for two months. This case presented a decided neurotic history. Gray proposed the name laryngeal epilepsy.

CASES VIII. and IX.—Lefferts (*Arch. of Laryngol.*, 1883, p. 165) reported two cases in comparatively young men; in each a spontaneous tickling sensation in the larynx caused a cough that resulted in a temporary brief unconsciousness. The larynx was normal in each case, and there was no history of epilepsy.

CASE X.—P. McBride (*Edinb. Med. Rev.*, 1884, p. 790) reported a case under the title, "Rare Form of Laryngeal Neurosis." A male, aged thirty-five years, had difficulty in breathing, two weeks after having swallowed a fish-bone. He would have a short cough, causing swimming in the head and dizziness. He never lost consciousness nor presented epileptiform symptoms, and McBride considered that the paroxysm was due to spasm of the glottis.

CASE XI.—Russel (*Birmingham Med. Rev.*, 1884, p. 71) reported a case in a male, aged fifty years, who suffered from catarrhal pneumonia for fourteen years. The tickling in the larynx culminated in cough and unconsciousness. No epileptiform symptoms.

Massei (*Giorn. Internaz. de Scien. Med.*, Naples, 1884, p. 192) reports three cases:

CASE XII.—A male, aged forty-five years, who had suffered from chronic bronchial catarrh, with acute exacerbations, who had one attack of laryngeal vertigo.

CASE XIII.—A male, aged fifty years, suffering from chronic follicular pharyngitis. He had repeated attacks of syncope consequent upon moderate coughing. He had diffuse catarrh of the larynx and trachea.

CASE XIV.—A male, aged fifty-six years, had suffered from vertigo from his thirty-first to his forty-second year. He would have asthma, with cough culminating in vertigo, sometimes four attacks a day. Laryngoscopic examination revealed hyperæmia of vocal cords and trachea. He was diabetic.

None of these cases had epileptiform symptoms or antecedents; nevertheless, Massei compares laryngeal vertigo to epilepsy, and attributes its origin to vagus irritation: "The irritation of the vagus disturbs, by alteration of the function of the heart, the circulation in the brain, and thus causes a change in the relation between the arterial and venous tension and the condition of the cerebro-spinal fluid that is sufficient to cause vertigo and epileptic attacks."

F. I. Knight (*Trans. Amer. Laryng. Assoc.*, 1886) published a very interesting and comprehensive paper on this subject, reporting two cases:

CASE XV.—A male, aged forty-two years, suffering from bronchitis for a year, who had an attack of laryngeal vertigo after being subjected to severe mental strain for some time. There was no evidence of spasm of the glottis, nor of convulsive movements.

CASE XVI.—A female, aged forty-seven years, who had granular pharyngitis for ten years. She lost consciousness only once after coughing. Both of these cases recovered under treatment.

[1] Read before the Section in Laryngology and Rhinology, New York Academy of Medicine.

CASE XVII.—C. W. Chamberlain (*Proc. Conn. Med. Soc.*, 1882, p. 47) reports the case of a male, aged thirty-eight years, who had been garroted. After the acute inflammatory symptoms had subsided, he was seized, after dining, with inability to breathe. He had a series of catching respirations that resulted in syncope. These attacks would occur after eating or when very much fatigued. He never had epileptiform symptoms. Cured by strychnine.

CASE XVIII.—E. Weill (*Rev. Mens. de Laryng.*, October, 1888) reports the case of a vigorous male, aged forty-five years, who had suffered from asthma for eight years. During the attacks of asthma he is subject to attacks of laryngeal vertigo.

CASES XIX. and XX.—G. Thermes (*Journ. de Méd. du Paris*, 1887, p. 936) reports two cases of whooping-cough in males, aged sixty-four and sixty-seven years, respectively. Toward the termination of the disease, fits of coughing would occur that would cause oscillatory sensations, with cloudiness of vision and temporary unconsciousness.

To these cases, that cover the literature of the subject, as far as ascertainable, is to be added the following:

CASE XXI.—G. W. C., male, married, aged forty-four years, of vigorous physique, though inclined to *embonpoint*, consulted me in 1888, for his throat. He stated that he had suffered from attacks of spasmodic asthma since childhood, except during a voyage to South America, and during four years' service in the Civil War. At the close of the war he engaged in railroading, and four weeks after confinement in an office his asthmatic trouble recommenced. His business necessitated his residence in Philadelphia, Baltimore, Cleveland, Chicago, St. Paul, and New York, and notwithstanding this variety in his climatic environment, the trouble remained about the same, although in recent years his discomfort from this has greatly diminished. If he spends his summers in the country, he is a sufferer from hay-fever.

In 1875 he was garroted, his throat and chest being severely beaten. His injuries necessitated his confinement in the house but for a few days, though for some time subsequently he felt a soreness in his throat.

In 1876, while lying on a lounge, he suddenly felt a catching in his throat, objects revolved around him, and he fell forward unconscious, remaining so for about a minute; his face was purplish-red, and, on recovering consciousness, he felt nauseated. Since the first attack, he would at various times feel a sensation of tickling in his throat, that would result in a few sharp, short coughs, culminating in unconsciousness. This latter condition would endure for a variable period, from a few seconds to a minute. On recovering consciousness he would, as in all the reported cases, resume a conversation or any other matter with which he had been engaged at the commencement of an attack. He never had any epileptiform symptoms, and his family history is unexceptionable.

He has noticed that the attacks would never occur in the open air, always in closed or heated rooms. Nervous excitement or fatigue were inciting causes. Though occasionally he has suffered from dyspepsia, the attacks were not associated with this trouble.

He has consulted specialists in all the cities in which he has resided, and the consensus of opinion is that the garroting produced a laryngeal trouble that caused the cough. No particular importance was attached to the syncope, though to him it has been the most alarming symptom.

His inspiratory murmur was stridulous, and sonorous and sibilant râles are detected over each lung. The chest is well developed, measuring thirty-eight and a half inches in circumference. An examination of the larynx reveals congestion of the arytenoids and false vocal cords, occasionally resulting in an acute laryngitis. The rima glottidis is of normal size, and there seems to be proper nerve stimulation to the vocal cords.

With the intention of relieving the asthmatic condition, potassium iodide was administered, but no relief followed this medication. He was then given doses of sodium bromide at night, with syrup of hydriodic acid during the day. This treatment caused immediate diminution in the frequency and irritability of the larynx, and he has not now suffered from an attack for some time.

Sphygmographic tracings of the pulse during an effort at forced expiration, while the glottis is closed, show but little divergence from the same experiment in a healthy man. No dizziness was felt during this effort at forced expiration, which was kept up for thirty seconds. Several repetitions of this experiment produced no different result. Rapid inspiration, persisted in for some time, produced nothing but physical fatigue; and, as the patient stated, during an asthmatic attack he has kept up rapid respiration for twenty-four hours without unconsciousness resulting. If he coughs protractedly, cloudiness of vision occurs, but no unconsciousness. A differentiation between this cloudiness and the obscuration that precedes the unconsciousness of a vertiginous attack, is that *muscæ volitantes* occur in the latter.

From the brief *résumé* of the reported cases it may be inferred that there is a diversity of opinion as to the exact nature of the disease.

Several excellent authorities consider it a laryngeal epilepsy, but so many features are lacking in a resemblance to even a mild form of *petit mal* that this, it seems, is an inappropriate nomenclature. As Knight (*op. cit.*) says: "Loss of consciousness does not compel us to consider a case epileptic, for asphyxia and syncope may produce temporary unconsciousness." Furthermore, in the case of Sommerbrodt (*Berl. klin. Woch.*, Sept. 25, 1876), a polypus on the left vocal cord produced clonic convulsions with unconsciousness, foaming at the mouth, biting of the tongue, with subsequent paresis of the left arm and leg. In this case there were decided epileptic symptoms, but none of the reported cases of laryngeal vertigo resembles it, save in loss of consciousness. Landon Carter Gray (*op. cit.*) fortifies the applicability of the term laryngeal epilepsy by comparing it with the cough in cases of posterior spinal sclerosis; in these cases, while the same fun-

damental pathogenesis may exist, yet the attacks are of longer duration, and a post-mortem examination reveals degeneration of the pneumogastric. As all the cases of laryngeal vertigo are reported improved by treatment, it is improbable that any gross lesion of that nerve occurs in the disease.

Gasquet (*op. cit.*) considers that a reasonable explanation of the phenomena is Woakes's theory ("Etiology and Treatment of Occipital Headache," *Practitioner*, 1878, p. 263) of the transmission of impressions to the inferior cervical ganglion; this causes vaso-dilatation of the vertebral artery and its labyrinthine branch, with corresponding pressure on the endolymph or fluid in the semicircular canals; hence the interference with the equilibrating apparatus. While it is impossible to contradict this theory, it seems unnecessarily elaborate, especially when the nervous connections are considered.

Thermes (*op. cit.*) explains the phenomena by an afferent impulse from the superior laryngeal to the pneumogastric, thence to the respiratory centre in the medulla; these cause efferent impulses, culminating in cough, etc.

If vertigo is a sense of defective equilibrium, associated with revolving of surrounding objects and a feeling of cerebral oppression, the reported cases do not evidence the existence of these symptoms, and the term is a misnomer applied to this laryngeal neurosis. The fact that there is an aural, an ocular, or a stomachic neurosis resulting in vertigo, does not necessitate the existence of a laryngeal reflex.

Weir Mitchell ("Vertigo," *Pepper's System of Medicine*, vol. v. p. 419) refers to the close relation of the pneumogastric centre of the cerebellum to the centre of equilibration as demonstrated by the gastric symptoms in vertigo. Working from this fact we must conclude that the impulse from the superior laryngeal nerve must cause afferent and efferent impulses in the pneumogastric; the former to the cerebellum, causing interference with the equilibrating centres (syncope), and the latter to the stomach (nausea).

Weber (*Müller's Archiv*, 1851) gives a theory of vertigo due to circulatory disturbance: "The pressure exercised at the summit of the venous cone results in a considerable reflex in the veins that is not prevented by the valves, the blood constantly arriving and finding no outlet. Hence a stasis results, with distention of the thoracic veins, followed by injection of the eyes, redness of the face, abolition of the cerebral circulation, with at last suppression of the functions of the brain (vertigo and also apoplexy), of the peduncles, and of the corpora quadrigemina." McBride (*op. cit.*) accepts this theory, and quotes in confirmation of it the analgesia produced by rapid breathing. The comparison seems defective in that the latter result is a consequence of oxygen intoxication, while the former is, in part, a carbonic acid intoxication. It is believed, furthermore, that a refutation of this theory is demonstrated by the failure to cause vertigo in the case herewith reported by the intense pressure on the venous system attained in the effort at forced expiration with a closed glottis, even when persisted in for thirty seconds; also by the failure of comparatively long attacks of coughing to cause unconsciousness.

All authorities agree that the inception of the attack is due to a short, sharp cough. It is, therefore, improbable that that this causes toxic venous stasis, where a prolonged cough will not. So the circulatory theory must be abandoned for the neurotic.

As the entire phenomena rest upon the occurrence of loss of consciousness, the laryngeal symptoms being either negative or unimportant, and as this loss of consciousness is as sudden as that occurring in ordinary syncope (though of much shorter duration), the term *laryngeal syncope* might be adopted for cases presenting the symptoms herein described, because such a term would neither do violence to the probable etiology of the affection nor to the exactness of our nomenclature.

The treatment seems based on local counter-irritants in cases presenting laryngeal symptoms, and the bromides internally, although in several cases strychnine has proved advantageous.

NEW YORK, March 26, 1889.

MEDICAL PROGRESS.

Antisepsis as Practised by M. Trelat.—MR. ERNEST HART (*British Med. Journal*, May 25, 1889), writing of "Medical Paris of To-day," gives the following account of the antiseptic method as used by Professor Trélat:

The special precautions which he borrows from Lister and from French antecedents are drainage and dressings with antiseptic gauze or other substances; repeated washings with antiseptic solutions are also frequently employed in his clinique with good results. Whenever it is possible, M. Trélat has suppressed drainage of wounds, even for extensive wounds, or for amputation, or removal of tumors. Where perfect apposition is possible he secures it by maintaining it by superficial and deep sutures, and leaving no drain in the wound. After a successful course of operations for more than two years, he has obtained absolute confidence in this method of proceeding, which may be described as the British method following on the indications of Liston, Ferguson, and Lister.

In all his operations he employs, after thorough washing with soap both of the hands of the operator and of the field of operation, a solution of biniodide of mercury, containing in each quart of water 20 grammes of alcohol, 0.1 gramme of iodide of mercury, and 0.03 gramme of iodide of potassium; without the addition of iodide of potassium the iodide of mercury is insoluble in this preparation. By the addition of the iodide of potassium the iodide of mercury is somewhat decomposed; it is

transformed into an iodurated iodide of mercury. Nevertheless, prolonged experience during the last three years, which had in the first instance demonstrated the insufficiency of a solution of 5 centigrammes, has established in his practice the perfect efficacy of the solution employed. That solution has, he considers, the great advantage of being at least as efficacious as the solution of bichloride of mercury 1 per 1000, and infinitely less irritating to the hands of the operator and to the tissues and organs of the patient, especially in the neighborhood of the anus, vagina, etc.

After operation, terminating with bandages, washing, complete suture, and without drainage, he employs very simple dressings, most frequently iodoform gauze, which he replaces frequently with salol gauze; above this a layer of thoroughly aseptic anhydrous cotton-wool, externally a layer of ordinary cotton-wool, extending far beyond the wound. The whole is kept in place by many turns of the bandage, arranged so as to obtain regular and pretty firm compression of the seat of operation. When necessary he adds for some hours an India-rubber bandage, promptly replaced by an ordinary linen bandage. This dressing is undone at the end of five or six days and the sutures removed; the new dressing is not taken off for ten or twelve days later, when the cure is complete.

Lanolin in Blenorrhagia.—DR. STERN, according to the *Revue Gén. de Clin. et de Thèr.*, May 2, 1889, has used injections of lanolin with great success in a number of cases of blenorrhagia. The discharges disappeared rapidly. After a continuation of this treatment for eight days, Dr. Stern uses astringent injections, and finally a one and a half per cent. solution of resorcin.

The formulæ preferred by him are as follows;

I.—*Simple Lanolin Injection.*

℞.—Lanolin . . . . 25 parts.
Oil of sweet almonds . . 75 " —M.

II.—*Antiseptic Injection.*

℞.—Salicylic acid . . . 4 grains.
Lanolin . . . . ʒvjss.
Oil of sweet almonds . . f ʒijss.—M.

III.—*Astringent Injection.*

℞.—Sulphate of zinc . . . ¾ grain.
Distilled water . . . f ʒjss.
Lanolin . . . . ʒvj.
Oil of sweet almonds . . f ʒijss.—M.

A Cure for Dandruff.—DR. A. J. HARRISON, of Bristol, recommends the following salve for dandruff:

Caustic potash . . . . 8 grains.
Phenic acid . . . . 24 grains.
Lanolin, Cocoanut oil } . . . . āā ʒjv.—M.

This preparation should be rubbed into the scalp morning and evening. Complete cure is usually effected in one to three months.—*Le Progrès Méd.*, April 20, 1889.

Treatment of Diaphragmatic Hernia.—PROF. POSTEMPSKI, of Bologna, relates the case of a patient who had been stabbed, four months before coming under notice, in the sixth interspace on the left side. The wound healed in eight or ten days, and he went back to his work. On making an effort, however, such as lifting a heavy weight, he suffered from painful sensations referable to the heart and intestines. The heart was displaced, there was tympanitic resonance in the left chest above the nipple, intestinal occlusion, stercoraceous vomiting, and dyspnœa. He died soon after admission to the Consolazione Hospital. On *post-mortem* examination, a wound two centimetres long was found in the diaphragm, and the transverse and descending colon with almost the whole of the omentum were herniated into the thorax.

This case led Prof. Postempski to devise an operation by which he thinks it possible to cure such a condition. Having convinced himself by experiments on the dead body that it is not possible for the surgeon to reach the diaphragm from the abdomen, he proposes that an opening should be made in the chest-wall as in thoraco-plasty, one or two ribs being divided in two places if necessary, and the wound in the diaphragm sutured, the edges being first freshened if need be. Section of the ribs is not required in the lower spaces. On March 4th of the present year he had an opportunity of trying this operation on the living subject. A boy, aged fourteen, received a stab two centimetres long in the eleventh interspace on the left side in the posterior axillary line. The omentum protruded from the wound to a length of five or six centimetres. Prof. Postempski enlarged the wound by twelve centimetres, and forced the eleventh and twelfth ribs widely apart, bringing into view a large part of the vault of the diaphragm, in which a wound one and a half centimetre long was seen. The protruding omentum was tied and cut away, the stump being pushed back into the abdomen. The edges of the diaphragmatic wound were then brought together with silk sutures passed through the whole thickness of the muscle. The pleural cavity, which contained clots of blood, was washed out, and the wound in the chest-wall was closed with deep sutures passing through the parietal pleura. No drainage-tube was used. On opening the chest, the air had rushed in and caused pneumothorax, but no serious consequence followed this. After the wound was closed, emphysema of the whole left side of the chest up to the neck came on. In less than a fortnight both pneumothorax and emphysema had disappeared; the wound healed by first intention, and the patient was presented to the Roman Academy of Medicine three weeks after the operation. On April 1st he left the hospital quite well, except for slight pleuritic thickening round the wound.—*The British Med. Journal*, May 4, 1889.

Iron for Children.—Although the value of iron tonics for children is well recognized, yet the usual formulæ in which they are prescribed are most unpleasant and difficult to administer. The following are quoted from the *Revue Gén. de Clin. et de Thèr.*, May 9, 1889, and will be found both pleasant to take and effective:

I. Effervescent ferruginated lemonade. The two mixtures are added to each other at the moment of drinking:

Mixture A.

℞.—Citrate of iron . . . . gr. ix.
Citric acid . . . . . gr. xij.
Water . . . . . f ʒij.—M.

Mixture B.

Bicarbonate of potash . . .	gr. xij.
Syrup of lemon	℥ijss.
Water	f℥jss.—M.

The above is sufficient for two doses.

II. Pills of pepsin and iron. Tanner prescribes two of the following pills for children three years of age:

℞.—Reduced iron	19 grains.
Phosphate of zinc	9 "
Pepsin	19 "
Glycerine	q.s.

Make into twenty pills.

III. The following is also always easily administered and greatly liked by the little ones:

℞.—Hydrated peroxide of iron . .	℥j.
Confection of orange } . .	āā ℥v.—M.
Confection of opium }	

Dose, from one-half to one coffeespoonful, according to age. The above is highly recommended by Dr. Ellis.

The Toxic Action of Cocaine.—Regarding the action of cocaine, DR. WÖLFLER (*Deutsche med. Woch.*, May 9, 1889) has found that it is far more toxic when used in operations on the head or face than when used on other parts of the body. In operations on the extremities sixteen minims of a five per cent. solution may be injected without any unpleasant symptoms arising, while in operations on the face, head, and even the neck, toxic symptoms will be observed if more than one-third of a grain is used.

Splenectomy.—PROF. D'ANTONA related a case at the Surgical Congress of Bologna, in which he had removed the spleen on account of chronic fever caused by a specific bacterium. The patient, a boy, aged three and a half years, suffered from pleurisy, with effusion on the left side, in March, 1887; a few weeks later he had gastro-intestinal catarrh, with high temperature at night, and swelling in the region of the spleen. On the thirteenth day there was resolution of the fever, but the spleen continued to enlarge. Arsenic, quinine, and other antimalarial remedies were tried in vain. The fever returned in a short time, and antipyretics were powerless to reduce it. There were occasional sudden remissions, to the extent of four or five degrees. Meanwhile the spleen became larger and larger, but the child could run about the house, and had a most voracious appetite. In June, 1888, when Dr. D'Antona saw the little patient, the belly was large, the body emaciated, the intelligence bright; he suspected the existence "of some infection *sui generis* situated in the spleen and invading the organism from time to time." On August 13th, splenectomy was performed. The temperature fell to the normal point on the day of the operation, and though there was a slight rise on the following day, the fever ceased entirely on the fifth day. This temporary improvement was followed by gastro-intestinal catarrh, purulent otitis, and afterward diffuse bronchitis. These complications disappeared, and the child seemed to be completely cured. About five months later the boy's father, who was a medical man, had two patients with cerebro-spinal meningitis under his care: the boy contracted the disease and died, but there was no *post-mortem* examination.

Dr. D'Antona presented the extirpated spleen, which weighed one kilogramme three grammes, being about one-tenth the child's total weight. The blood obtained from the spleen was very pale, the white corpuscles not increased, the red discolored. Cultures made in agar-agar broth, and serum gave no result for eight days, then a bacillus resembling the microbe of typhoid was discovered, which Dr. Caselli believes to have been the cause of the disease. In grew with difficulty in agar-agar, better in gelatine; but unlike the typhoid bacillus, it did not grow on potato. Inoculation experiments have so far proved fruitless.

DR. CECI described the result of splenectomy in a girl on whom he performed that operation three years previously. At the age of eighteen menstruation had not yet begun. Twenty days before the operation, great enlargement of the thyroid took place; this disappeared in two months, but the patient remained in a marasmic condition. Some months later, remarkable improvement took place, and she gained considerably in weight. Coincidently with this improvement, hypertrophy of the tonsils took place to such a degree as to threaten suffocation. He removed one tonsil, a fortnight after which the goitre disappeared entirely. The patient gained further in weight, and has since remained in perfect health. Dr. Ceci thinks that the enlargement of the tonsils was vicarious, these organs having in some way taken the place of the spleen which had been excised.—*The British Med. Journal*, May 4, 1889.

Psoriasis of the Head.—As a most excellent remedy for psoriasis capitis DR. E. STERN, in the *Correspondenzblatt für Schweizer Aerzte*, May 11, 1889, recommends the following:

℞.—White precipitate of mercury .	10 parts.
Green soap	40 "
Anhydrate of lanolin . .	50 " —M.

The disease will completely disappear inside of a week leaving the skin smooth and white. The application of lanolin cream and daily washing will soon restore the normal functions of the skin.

Iodoform in Inflammation of the Joints.—DR. V. MOSETIG-MOORHOF, who is in charge of the Imperial Hospital of Wieden, Austria, has observed most excellent effects following the hypodermatic use of ethereal solution of iodoform in cases of articular inflammation, especially of a fungus type. The injections frequently cured cases in which otherwise excision would have been necessary. Dr. v. Mosetig-Moorhof tried the effects of other antiseptics used similarly, but their action was very unsatisfactory.—*Centralblatt für Chirurgie*, May 4, 1889.

The Vitality of the Typhoid and Cholera Bacillus.—By a series of experiments DR. J. UFFELMANN has demonstrated that the bacillus of typhoid fever has a most tenacious vitality, and that it will not only live but increase in decomposing fecal masses for fully four months. At a temperature of 50° F. they will gradually decrease in number, but will increase at a temperature of 63° F. Contrary to this, it was found that the cholera bacillus was of a "most delicate constitution," and at longest it only lived four days in fecal masses, but usually died much sooner. The latter bacillus seemed to live longer

in water than in feces.—*Prager med. Wochenschrift*, April 17, 1889.

Treatment of Fractured Patella by Wiring the Fragments.—DR. CECI, at the Surgical Congress of Bologna, reported eleven cases in which he had treated fractures of the patella by subcutaneous wiring with buried sutures. The patients were for the most part between fifty and seventy-eight years of age. In nearly all the cases the fracture was simple and transverse, but in one there was comminution of the lower fragment, and in another, a man, aged sixty-nine, the bone had been broken a second time two months after the first accident. Dr. Ceci uses silver sutures. All the cases had done well, hæmatoma and non-infective arthritis having occurred only once.—*The British Med. Journal*, May 4, 1889.

A Modification of Dr. Jeffries' Bread for Diabetics.—Dr. JOHN A. JEFFRIES published in the *Boston Med. and Surg. Journal* of January 24, 1889, the following formula for a new diabetic bread: One cup of graham flour; one cup of best bran previously scalded with one cup of boiling water; two eggs · German yeast or baking powder; salt to taste; one cup of milk or water. To be mixed with a spoon. Such a bread contains 17.72 per cent. of starch, the equivalent of 19.68 per cent. sugar.

Dr. James Tyson, in the *University Medical Magazine* for June, 1889, writes as follows:

"Happening to have at the time a case of diabetes, where the sugar was eliminated by a selected diabetic diet from which bread was excluded, it occurred to me to make a trial of this modified bread. Accordingly some was made after this formula; at the end of one week the urine was found to contain between one-half per cent. and one per cent. of sugar; it then occurred to me to modify the formula by substituting the gluten flour of the Health Food Company of New York for the graham flour, mixing it with bran as before. At the end of another week the urine was found to contain about one-quarter of one per cent. of sugar; the patient was then taken off of all bread, and at the end of another week sugar had disappeared from the urine, showing that this combination, as was to be expected, was better than the former. The bread thus modified was quite palatable."

Treatment of Scabies with Petroleum.—DR. CONSTANTINE PAUL sends the following formula for "Petroleum soap" to *L'Abeille Médical*, April 30, 1889:

℞.—Soap	. . . . .	℥iij.
Petroleum	. . . . .	℥f.jss.
Alcohol	. . . . .	℥f.jss.
Wax	. . . . .	℥j.—M.

Two or three applications a day will result in complete recovery in one or two days.

The preparation is also said to be of value in ringworm.

Cancrum Oris Successfully Treated by Local Applications of Corrosive Sublimate.—DRS. PETER YATES and E. C. KINGSFORD report three cases of severe cancrum oris in children in the *Lancet* of May 4, 1889, which were cured by applications of corrosive sublimate. The affected parts were wiped off with a strong solution of perchloride of mercury (1 to 500), and afterward dressed with lint soaked in a similar solution (1 to 1000). The beneficial effects of this treatment were immediately observable; healthy granulations soon made their appearance, and the wound quickly contracted. As soon as a healthy condition of the wound was insured the treatment was discontinued, and simple dressings substituted.

Preventive Treatment of Diabetic Coma.—DR. STADELMANN, of St. Petersburg, is of the opinion that the coma in diabetes may always be prevented by prompt treatment. He regards the coma as an acid poisoning of the blood, and recommends strong doses of alkalies. He gives the following formulæ:

I. ℞.—Citric acid	. .	℥ij.
Carbonate of soda	. .	℥v.
Saccharine	. .	2 grains.
Carbonated water	. .	℥v.
Spirits of menthol	. .	gtt. iij.—M.

Two or three doses a day.

II. ℞.—Tartrate of soda	. .	℥ijss.
Carbonated water	. .	℥f.vss.
Saccharin	. .	2 grains.
Essence of lemon	. .	♏xl.—M.

The above Stadelmann claims to lessen greatly the œdema and prevent coma. The solutions may be diluted in pure water.—*Journal de Méd. de Paris*, April 28, 1889.

A Simple Inhaler.—It may be useful to others to mention the following very simple mode of inhaling volatile remedies, such as pumiline, menthol, eucalyptus, etc., for the relief of some affections of the throat and lungs. The device is suggested by E. E. MADDOX, M.D.

Coil a piece of paper into the shape of a cigarette, and fix it with gum. Then insert into one end a small uncompressed piece of absorbent cotton-wool, upon which a drop or two of the desired medicament has been poured. Air is now drawn through the tube by the patient, who holds the other end between his lips. This plan is by many patients, especially by men, preferred to the use of any form of respirator, or to inhalations mingled with steam. These last, moreover, have a relaxing effect in some atonic conditions of the throat.

Of a number of remedies, including menthol, inhaled in this way by a patient suffering from pulmonary phthisis, I found that oil of peppermint gave most satisfaction. A small tube of vulcanite like a cigarette-holder at one end, with a raised flange or border to be held within the lips, would doubtless answer still better; but an inhaler, which, when needed, can be made on the spot, has advantages of its own.—*The Practitioner*, May, 1889.

Creolin and Cholera Bacteria.—DRS. S. SIRENA and G. AGLESSI, of Florence, have found that even weak solutions of creolin act most powerfully upon the cholera bacilli. Eight to ten drops of a three per cent. solution of creolin added to a culture of pure cholera bacilli will sterilize the latter in five minutes; four drops will sterilize it in an hour, and five drops in half an hour. It has, however, been ascertained that solutions of creolin lose their strength in time, and should, therefore, be always made fresh. Creolin solutions also immediately sterilized cultures containing typhoid bacilli.—*Centralbl. für klin. Med.*, May 11, 1889.

For the Removal of Freckles.—

℞.—Chloride of ammonium. . . ʒf.j.
Hydrochloric acid. . . . ʒf.jss.
Glycerine . . . . . ʒf.j.
Lait virginal[1] . . . . . ʒf.jss.—M.

Apply to the freckles morning and evening with a camel's-hair brush. Their complete disappearance is said to be speedy.—*L'Union Médicale*, April 25, 1889.

A New Mydriatic.—BAMBERGER and MÜLLER (*Berichte der Chem. Ges.*) have prepared from hydronaphthylamine a compound which promises to prove a powerful mydriatic, bearing the systematic name of tetra-hydro-beta-naphthylamine, and having the formula $C_{10}H_7H_4NH_2$. According to Professor Filehne, of Breslau, the instillation of a small quantity of a five per cent. solution causes the dilatation of the pupil of the eye treated only, though after absorption of a minute quantity both eyes become affected. The dilatation is greater than that produced by atropine. This compound is said (*Chemical Gazette*) to act as a mydriatic by stimulating the nerve-endings instead of by paralyzing the muscles of contraction as does atropine.—*The British Med. Journ.*, May 18, 1889.

Quinine used Hypodermatically in Malaria.—DR. J. A. CORREA DE CARVALHO has recently used hypodermatic injections of quinine in cases of malaria with marked success. He considers that the intolerance of quinine by the stomach is often the cause of its uselessness in malaria. He uses the following formula for injection:

℞.—Hydrochlorate of quinine . . 15½ grains.
Hydrochloric acid . . . q. s.
Distilled water . . . . 32m.—M.

The Care of the Hands of Surgeons.—The hands of surgeons are frequently roughened and cracked by frequent immersion in bichloride and carbolic acid solutions. DR. GEORGE MAYER, of Berlin, has found that if, after they have been thoroughly washed, a small quantity of lanolin is rubbed over the hands of the operator, it will keep them smooth, and also do away with that unpleasant numbness which follows long immersion in strong antiseptic solutions. As a most agreeable preparation for chapped hands he give the following:

℞.—Lanolin. . . . . ʒjss.
Vanillin . . . . . 2 grains.
Oil of roses . . . . . gt. j.—M.

—*Centralbl. für Chir.*, April 20, 1889.

Naphthol in the Treatment of Purulent and Granular Conjunctivitis.—The *Revue gén. de Clin. et de Thérap.*, April 25, 1889, gives the following formulæ, which have been used with success by DR. DUPORT in the ophthalmological clinic of Hôtel-Dieu in Paris.

I. For purulent infantile ophthalmia:

1. ℞.—*a* Naphthol . . . . 1 part.
Alcohol . . . . 3 parts.
Distilled water . . . 3000 "

Apply two or three times daily.

2. ℞.—*a* Naphthol . . . . 1 part.
Distilled water . . . 5000 parts.

Cauterize with nitrate of silver two or three times daily, and apply the above lotion six or eight times during the day.

II. For granular conjunctivitis:

℞.—*β* Naphthol . . . . . 1 part.
Vaseline . . . . . 300 parts.

To be applied daily. The strength of the ointment may be increased according to indications.

III. In pannus the following has been used with success:

℞.—*a* Naphthol . . . . . 1 part.
Vaseline . . . . . 300 parts.

Apply every morning.

Also

℞.—*a* Naphthol . . . . . 1 part.
Distilled water . . . . 2500 parts.

To be used as a lotion four times daily.

Treatment of Alopecia.—

℞.—Tincture of jaborandi
Tincture of cantharides
Soap liniment
Tincture of pyrethrum . . āā ʒijss.

Spirits of citron
Tincture of tolu
Tincture of vanilla . . āā ʒjss.

Apply every morning and evening with friction.—*Revue de Thér. Med.-Chir.*, May 1, 1889.

Treatment of Corns.—DR. C. MCDERMOTT writes to the *British Medical Journal*, April 28, 1889, that a saturated solution of salicylic acid in flexible collodion is a most efficient remedy for corns. The solution should be applied to the corns twice a day. In less than two weeks their removal will be complete.

The Influence of Moderate Exercise upon the Digestion.—DR. COHN (*Centralblatt für klinische Medicin*, May 4, 1889) has recently conducted a long series of careful experiments relative to the influence of moderate exercise upon digestion. His experiments were confined to dogs, and his results are as follows: When the animal is at rest the digestion begins in an hour after the food has been taken, is at its height in two hours and then gradually decreases until it is complete, the entire process taking about five hours. An entirely different result, however, was observed in dogs taking moderate exercise after the meal. In these the process of digestion was not at its height until five hours after the food had been taken and was not complete in six hours. Dr. Cohn concludes that exercise retards digestion in dogs at least.

Artificial Carlsbad Salts.—DR. ZIEMSSEN, in the *Revue de Thér. Méd.-chir.*, May 15, 1889, gives the following formula for artificial Carlsbad salts:

℞.—Sulphate of sodium . . . 40 parts.
Carbonate of sodium . . 6 "
Chloride of sodium . . . 1 part.—M.

Dissolve in hot water, evaporate, and pulverize the residue. Dose, half teaspoonful in hot water.

[1] *Lait virginal*, French cosmetic, prepared by dropping alcoholic tincture of benzine into water until the mixture becomes perfectly white.

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THE CALAMITY AT JOHNSTOWN, AND ITS LESSONS.

THE appalling disaster which has desolated the valley of the Conemaugh with its overwhelming destruction of life and property, has aroused a mighty throb of sympathy and a generous and widespread response to the cry for relief. The medical profession, true to its traditions and instincts, has promptly considered the needs of general medical assistance, and at Pittsburg and Philadelphia relief corps were immediately organized, the volunteers dropping their work at home to repair to the scene of the floods to give their professional services to its maimed and suffering victims.

The members of our own profession have been no less unfortunate than the other inhabitants of the valley—some have lost their lives; others have survived to find swept away some or all of their families, their homes, and their property. To take measures for their relief, the President of the College of Physicians of Philadelphia and the President of the Philadelphia County Medical Society promptly called meetings and Dr. W. W. Keen, President of the County Society, at once authorized Dr. Flick, a member of the Society now at Johnstown, to draw upon him for a liberal sum to aid in supplying the more immediate and pressing needs of the physicians of the valley and their families.

THE MEDICAL NEWS has ever endeavored to realize that its readers regard it primarily as a medical *newspaper*. During the past seven or eight years no great public event exhibiting any phase of interest to the medical profession has been allowed to pass without the fullest and promptest details being procured and laid before its readers. In pursuance of this policy, a member of the editorial staff was promptly despatched to Johnstown, and in spite of the great difficulties to be overcome, both in getting to the spot and in transmitting the news over the overburdened wires, a concise and scientifically interesting report of his investigations will be found in another column.

HE has read history to little purpose who does not perceive that in every catastrophe there is concealed the germ of some future benefit to mankind. The injuries inflicted, and the sorrows and sufferings endured, have an important lesson for the immediate survivors, for the community, and for every individual in what art or business soever he may be engaged. The events that occurred recently in Western Pennsylvania possess psychological, hygienical, and medical interests of supreme value. We purpose, now and here, to set before our readers such views of them as may seem conformable to the state of facts brought out by these terrible experiences.

The influence exerted upon the health of the living by the decomposition of dead bodies is now the supreme question. A single phrase states the truth of the matter. It has been said that "It is the living, not the dead, man we have to fear." Although a truth, it requires a modification under some circumstances. As the most pressing question of municipal hygiene at Johnstown, how should it be decided?

Many facts have proved that the gases and organic matters developed by decomposition of human remains are not necessarily injurious. It may be said, indeed, they are not injurious at all, if due care be given to personal hygiene, and quick escape of gases be secured by proper ventilation.

The gases of decomposition and the organic matter may under some circumstances act injuriously. Breathing continuously air thus contaminated, and never pure air at any time, human health gradually deteriorates. Special diseases are not produced, but the composition of the blood and the relative proportion of red and white corpuscles are changed, ulceration of the mucous membrane of the lower small intestine takes place, and the nutrition fails.

The cachectic state thus induced favors the development of such diseases as typhoid, diphtheria, etc.

Under some circumstances human remains can be the source of disease. Subjects dead of smallpox, diphtheria, fevers, etc., contain the germs of these diseases—the *materies morbi*—for a short time; but when decomposition takes place the contagium is destroyed. Decomposition of the body, which effects the return to its primal elements, is nature's mode of ending the enormous evils which would have filled the space between death and life.

Decomposition is a function of living organisms; it is a fermentation in which microörganisms play the essential part. The organisms in their growth and pullulation consume materials and resolve themselves into new products. It was most unfortunate that sentimental considerations, founded in a totally false conception of things, should have interfered with the burning of bodies started by accident. The physicians advised—if we understand aright—that the large collection of bodies in a great accumulation of drift which was then briskly burning, be permitted to remain and be disposed of by burning—a swift return to the primary elements, instead of the return by slow combustion when placed in the ground.

Although the earth above a decaying body acts as an oxidizer, it is clear that in the burials now going on at Johnstown sufficient regard cannot be paid to sanitary considerations. Insufficient care in burying the bodies, shallow graves, and a loose soil combine to make the result exceeding hurtful, for the air will contain at all times the gases of decomposition. Although special diseases are not produced, the health of individuals breathing such an atmosphere must deteriorate and make them suitable subjects for the rise and spread of serious epidemics. Furthermore, in so many subjects there could hardly fail to be cases of disease, such as typhoid, diphtheria, scarlet fever, whose germs have strong viability, and will survive all the agents employed for their destruction, because protected by their environment.

Morbific matters—disease germs—during the process of decomposition now going on, will be liberated, and under the circumstances secure admission to potable waters. We understand that these newly improvised graves are placed on the hillsides and in situations for their products of decomposition to secure admission to the surface wells, to the springs and streams about them. How certain it is that in course of time disease germs will thus enter the system of many people, with the usual result.

If the bodies must be buried, what disinfectants beside heat or destruction by fire can be utilized here?

The gases of decomposition may be destroyed by such agents as chlorine and the chlorides, under these circumstances, if effectively used and in sufficient quantity; but even if this be done it is unlikely that the pathogenic microbes will be disposed of, for in inner parts, surrounded by a tough environment, they cannot be reached by disinfectants of the most powerful kind. Chloride of lime is the best agent to be used for this purpose, because it contains much free chlorine, if *it be genuine—i. e.*, if it contains the proper proportion of chlorine gas.

It does not suffice, however, to place chloride of lime in the grave and on the body. If the disinfection is to be effective, the abdominal cavity at least should be opened and the lime placed there in full quantity.

THE PROPHYLAXIS OF TUBERCULOSIS.

SEVEN years have elapsed since the announcement of Koch's discovery of the tubercle bacillus, and his demonstration of its causal relation to the entire group of the tuberculous diseases. On the whole, it cannot be said that the hopes to which that discovery gave rise have been realized. The treatment of pulmonary phthisis has during this time undergone in rapid succession a series of startling and erratic changes. In so far as these changes have had for their basis any theory concerning the direct destructive action of drugs upon the bacillus within the tissues of the organism, they have led, one after another, to disappointment. To those who have been at the pains of informing themselves of the nature of the parasite, its mode of growth and distribution in the tissues, and the way in which its local and constitutional effects are produced, the rigid experiments of Trudeau were not needed to demonstrate the uselessness of attempts to discover a direct germicide treatment.

The attention of the profession has, however, been aroused, and the treatment of tuberculosis, and in particular of consumption, has once more become a question of the day. This time, thanks to the science of bacteriology, it is no question of mere speculation, but has for its point of departure a con-

nected group of well-ascertained facts. Dietetics, hygiene, respiratory gymnastics, climate have been brought into closer and more profitable service to the consumptive. If medicaments selected upon false theories have proved useless, the extra-medicinal management of the disease has been more reasonable and effective. Life has often been prolonged and cures have been occasionally accomplished. But the disappointments of a too sanguine therapy have been more than counterbalanced by the results of the efforts to which they have stimulated the profession. Among these results have been, not only the dispersion of many traditional errors, but also the acquisition of exact knowledge of the life-history of the tubercle bacillus, both within the animal organisms which it infests, and outside of them.

CORNET has shown (*Zeitschrift für Hygiene*, V. Band) that the dust collected from one hundred and forty-seven different hospitals, insane asylums, private houses occupied by consumptives, and crowded streets, contained in forty instances tubercle bacilli; in sixty-nine it was, however, free from them; and in the remainder the death of the animals used in the experiments being quickly brought about by the action of other bacteria, the result was indeterminate. The dust from twenty-seven rooms not occupied by consumptives showed no tubercle bacilli. Even in the apartments of severe cases, bacilli were not discovered save when the patient expectorated into handkerchiefs or upon the floor, and in no case was the dust of the walls infectious where spit-cups were exclusively used, though the bacilli were abundant in the sputum.

The deduction that the tubercle bacillus is only found in the immediate neighborhood of consumptives, is from these facts obvious. Cornet's further investigations (*Berliner klin. Wochenschrift*, 1889, Nos. 12, 13, 14, 15) strongly support the conclusion that infection occurs chiefly from dried sputum floating in the atmosphere and drawn into the lungs by the inspired air.

When infection takes place by direct inoculation elsewhere than in the lungs, the early lesions are invariably found at the point of inoculation and in the neighboring lymph-glands. The assumption that the lungs are the seat of an especial predilection for the development of the bacillus is absolutely false. The preponderance of pulmonary consumption over other forms of tuberculosis is to be explained by the greater exposure of the organs of respiration to inoculation.

Cornet regards the danger of infection by means of bacilli thrown off with the fecal matter in ulceration of the intestine, or in the urine in urino-genital tuberculosis, as extremely slight. Intestinal tuberculosis, from the use of imperfectly cooked meat from tuberculous animals, he regards as rare. Of greater importance is the consumption of milk from tuberculous cows, unless it has been thoroughly cooked, this being doubtless a frequent cause of intestinal tuberculosis in children.

The author refers to the experiments of Naegeli and others, which show that air passing over a moist surface does not take up bacilli or spores. He concludes from these experiments that it is absolutely impossible for the air-passages, for tuberculous cavities, or for the expectoration, so long as it remains moist, to render the expired air infectious. The consumptive is only dangerous by means of his expectoration, and not even by this so long as it remains moist. The moment that it dries it passes beyond our control, and, in the form of fine bacilli-bearing particles wafted about in the air, becomes the ordinary means of transmission.

Cornet concludes his interesting paper with a series of definite rules for the treatment of the expectorated matters, and for the prevention of the distribution of the tubercle bacilli. The subject as thus presented reduces the prophylaxis of tuberculosis to the simplest conceivable form, but, owing to the practical difficulties in the way of carrying it into effect, it would be Utopian to look forward to immediate results of importance on a great scale.

Cornet's suggestions have, however, been formulated in a series of regulations presented to the public by the President of the Police Board in Berlin, which are to be found in the issue of THE MEDICAL NEWS of May 25th, and in other columns of our issue of to-day we present an admirable address before the Pennsylvania State Medical Society by Dr. J. C. Wilson, reviewing the latest advances in the etiology and prophylaxis of tuberculosis, and a report for popular use embodying the knowledge of the day on its prevention, which has been prepared by Drs. Biggs, Prudden, and Loomis, at the request of the Board of Health of New York City.

THE fortieth annual meeting of the American Medical Association will be held at Newport, R. I.,

from June 25th to 28th, under the Presidency of Dr. W. W. Dawson, of Cincinnati. The general addresses will be delivered as follows: In Medicine, by Dr. William Pepper, of Philadelphia; in Surgery, by Dr. P. S. Conner, of Cincinnati; in State Medicine, by Dr. W. H. Welch, of Baltimore. The list of papers to be read in the various sections is lengthy and includes an unusually large number of attractive titles, and reflects great credit upon the officers of sections to whose energy this excellent programme is largely due.

The *Chairmen* of Sections are as follows:

Medicine, Dr. F. C. Shattuck, of Boston.

Surgery, Dr. N. P. Dandridge, of Cincinnati.

Obstetrics, Dr. W. H. Wathen, of Louisville.

State Medicine, Dr. J. Berrien Lindsley, of Nashville.

Ophthalmology, Dr. George E. Frothingham, of Ann Arbor.

Laryngology and Otology, Dr. W. H. Daly, of Pittsburg.

Diseases of Children, Dr. J. A. Larrabee, of Louisville.

Medical Jurisprudence, Dr. J. G. Kiernan, of Chicago.

Dermatology and Syphilography, Dr. L. Duncan Bulkley, of New York.

Dental and Oral Surgery, Dr. F. H. Rehwinkel, of Chillicothe.

Dr. Horatio R. Storer, Newport, is Chairman of the Committee of Arrangements.

We understand that one of the principal social features of the meeting will be a steamboat excursion after adjournment on Friday, given by the Rhode Island Medical Society, to Providence for the inspection of the Rhode Island and Butler Hospitals and, on the return trip, a stop will be made at a shore resort, when the members will be introduced to the pleasures of an old-fashioned clam-bake.

The programme, with its long list of admirable papers, gives every promise of this being one of the most interesting and attractive meetings that the Association has ever held.

DR. A. L. GIHON, Chairman, requests us to state that the Rush Monument Committee will meet in Right Gallery Room at Music Hall, Newport, R. I., on Tuesday, June 25th, at 1 P. M., or immediately after adjournment of the morning session of the American Medical Association. The attendance of all interested in this commendable and patriotic project is invited.

Collections and subscriptions should be forwarded to the treasurer, Dr. Joseph M. Toner, 615 Louisiana Avenue, Washington, D. C., before June 15th.

OWING to the interruption to railroad travel caused by the floods and the impossibility of a large proportion of the members reaching Pittsburg last Tuesday for the annual meeting of the Pennsylvania State Medical Society, those present very properly adjourned the meeting until September, without further transaction of business.

THE Maine Medical Association will hold its thirty-seventh annual meeting at Portland, on Tuesday, Wednesday, and Thursday of next week, under the presidency of Dr. S. H. Weeks, of Portland.

THE New Hampshire Medical Society will hold its ninety-eighth anniversary on June 17th and 18th, at Concord, under the presidency of Dr. Samuel C. Whittier, of Portsmouth.

DR. SAMUEL PRESTON MOORE, formerly Surgeon-General in the Confederate Army, died at Richmond, Va., on the 31st of May, aged seventy-four. He was appointed an assistant surgeon in the U. S. Army in 1856, and served in that capacity through the Mexican War and up to the time of the passage of the act of secession by his native State, South Carolina, when he resigned to enter the service of the Confederacy. After the close of the war he settled in Richmond. He took an active interest in educational matters and was a member of the Richmond School Board.

SPECIAL ARTICLE.

THE MEDICAL ASPECT OF THE DISASTER AT JOHNSTOWN.

(By Telegraph from a Staff Correspondent.)

JOHNSTOWN, PA., June 6, 1889.—Notwithstanding the fact that many of the reporters of the daily papers have sent messages from here indicating that diseases the result of exposure are exceedingly common, the fact is, that in the three largest hospitals very few cases of any kind exist, and, in over ninety per cent. of these, the individuals are suffering from injuries occurring both during and after the flood. The cases of pneumonia are very few, and the report that measles is to a large extent epidemic is entirely false. The truth is, that one or two children have

exhibited symptoms of this disease, the reports of which, in the present state of popular excitement, have grown in their severity with each mile that they have travelled. So far as the spread of any disease, such as this, is concerned, we feel quite confident that the conditions present are, with a few exceptions, eminently prophylactic in their character. The children who suffer are living in tents, which are necessarily very thoroughly ventilated, and crowding is impossible. So far as we have been able to learn, the history of any exposure on the part of the children affected with measles is very dim.

Too much care cannot be exercised in the selection and dispensing of much of the second-hand clothing which is sent forward in the relief trains by charitable persons. From some of the clothing which we saw distributed, we feel sure that lack of such care may readily result in the production of a large amount of contagious disease.

The danger of malarial poisoning is, we believe, not present, simply because the conditions favorable to the production of such miasms are absent. The water, sweeping through the valley with enormous force, has carried, in the majority of cases, the soft mud of the river banks to distant and low-lying bottom-lands, and has covered the entire site of Johnstown with a layer of pure sand and gravel varying in depth from a few inches to a foot. As the consequence of this, all cesspools have not only been thoroughly washed out, but afterward filled with sand; every particle of dirt and city filth has been washed away, and it would be hard to find, hygienically speaking, a more cleanly spot than the main portions of what was once Johnstown. The danger will be the accumulation of new filth, owing to the large number of strangers living in tents and the outdoor life of the survivors.

There is absolutely no use in sending more physicians here, save that by their training they may assist in the carrying out of measures belonging to the realm of preventive medicine. With the exception of a few who are assisting in hospitals, the majority of Philadelphia physicians have been detailed for the purpose of overseeing the thorough cremation of all dead animals. The only other measures which are adopted are those directed against the decomposition of human flesh, which popular clamor will not allow to be touched by fire. All other attempts to disinfect such sources of disease, without the aid of great heat, cannot prove but useless, for the bodies, as a general rule, are piled up in a mass of rubbish made up of old lumber, which is arranged in such a way that it is doubtful if a river of disinfectants could reach them, the débris acting as a shed. In an endeavor to obtain the identification of bodies, they have been kept, prior to this date, for too long a time previous to burial. This has been largely done away with by improved rules, ordered by cooler heads from outside relief corps.

The mental condition of almost every former resident of Johnstown is one of the gravest character, and the reaction which will set in when the reality of the whole affair is fully comprehended can scarcely fail to produce many cases of permanent or temporary insanity. Most of the faces that one meets, both male and female, are those of the most profound melancholia, associated with an almost absolute disregard of the future. The nervous system shows the strain it has borne by a tremulousness of the hand and of the lip, in man as well as in woman. This nervous state is further evidenced by a peculiar intonation of words, the persons speaking mechanically, while the voices of many rough-looking men are changed into such tremulous notes of so high a pitch, as to make one imagine that a child, on the verge of tears, is speaking. Crying is so rare that your correspondent saw not a tear on any face in Johnstown, but the women that are left are haggard, with pinched features and heavy, dark lines under their eyes. Indeed, the evidence of systemic disturbance is so marked in almost every individual who was present at the time of the catastrophe, that it is possible with the eye alone to separate the residents from those outside.

Every thing required in the way of surgical appliances seems to be on hand, but medicines are scarce and will probably be needed much more in the next few days than heretofore.

A fact in favor of the controlling of any malady is to be found in the very general exodus of the townspeople who crowd the platform of departing trains. There can be no doubt that this movement should be encouraged to the greatest possible extent, and it would be well if places away from Johnstown, at not too great distance, could be opened for the reception of those who, while not entirely disabled, are useless at home.

The scarcity of pure spring water which is not tainted by dead animal matter is a pressing evil for consideration, but we doubt if this is as important a fact at Johnstown as it is further down the river, owing to the large amount of decomposing flesh in the water at this latter point. No disinfectant can reach such a cause of disease, save the action of the large volume of water which dilutes all poisonous materials.

The State Board of Health should warn the people of the portions of the country supplied by the Conemaugh of the danger of drinking its waters for weeks to come.

ON THE PREVENTION OF TUBERCULOSIS.

THE following report has been forwarded to the Board of Health of New York City in response to the accompanying resolution of the Board.

Resolved, That Drs. T. M. Prudden, H. M. Biggs, and H. P. Loomis, the pathologists of this department, be and are hereby requested to formulate a brief and comprehensive statement regarding the contagiousness of tuberculosis in man, stating therein the evidence of the same and recommending in the briefest possible manner practicable the simplest means of protection from its influence.

REPORT.

The disease known as tuberculosis and, when affecting the lungs, as pulmonary tuberculosis (consumption), is very common in the human being and in certain of the domestic animals, especially cattle. About one-fourth of all deaths occurring in the human being during adult life is caused by it, and nearly one-half of the entire population at some time in life acquires it. The disease is the same in nature in animals and in man, and has the same cause.

It has been proven beyond a doubt that a living germ, called the tubercle bacillus, is the cause and the only cause of tuberculosis. It does not seem necessary to state the facts upon which this assertion is based, for the observation first made by Robert Koch, in 1882, has been confirmed so often and so completely, that it now constitutes one of the most absolutely demonstrated facts in medicine.

Tuberculosis may affect any organ of the body, but most frequently first involves the lungs. When the living germs find their way into the body they multiply there, if favorable conditions for their growth exist, and produce small new growths or nodules (tubercles) which tend to soften. The discharges from these softened tubercles, containing the living germs, are thrown off from the body. In pulmonary tuberculosis these discharges constitute, in part, the expectoration. The germs thus thrown off do not grow outside the living human or animal body, except under artificial conditions, although they may retain their vitality and virulence for long periods of time, even when thoroughly dried. As tuberculosis can only result from the action of these germs, it follows from what has just been said, that when the disease is acquired, it must result from receiving into the body the living germs that have come from some other human being or animal affected with the disease.

It has been abundantly established that the disease may be transmitted by meat or milk from tubercular animals. The milk glands in milch cows often become affected with the disease when their lungs are involved, and the milk from such animals may contain the living germs and is capable of producing the disease. Among stall-fed dairy cows 20 or 30 per cent. are sometimes found to be affected with the disease. Tubercular animals are also frequently killed for food; their flesh sometimes contains the germs, and if not thoroughly cooked is capable of transmitting the disease. Boiling the milk or thoroughly cooking the meat destroys the germs. Although the meat and milk from tubercular animals constitute actual and important sources of danger, the disease is acquired, as a rule, through its communication from man to man.

Tuberculosis is commonly produced in the lungs (which are the organs most frequently affected) by breathing air in which the living germs are suspended as dust. The material which is coughed up, sometimes in large quantities, by persons suffering from consumption contains these germs, often in enormous numbers. This material when expectorated frequently lodges in places where it afterward dries, as on the streets, floors, carpets, clothing, handkerchiefs, etc. After drying, in one way or another, it is very apt to become pulverized and float in the air as dust.

It has been shown experimentally, that dust collected from the most varied points, in hospital wards, asylums, prisons, private houses, etc., where consumptive patients are present, or have been present, is capable of producing tuberculosis in animals when used for their inoculation. Such dust may retain for weeks its power of producing the disease. On the other hand, dust collected from rooms in institutions or houses that have not been occupied by tubercular patients does not produce the disease when used for the inoculation of animals.

These observations show that where there are cases of pulmonary tuberculosis, under ordinary conditions, the dust surrounding them often contains the tubercle bacilli; and persons inhaling the air in which this dust is suspended may be taking in the living germs. It should, however, be distinctly understood that the breath of tuberculous patients, and the moist sputum, received in proper cups, are not elements of danger, but only the dried and pulverized sputum. The breath and moist sputum are free from danger, because the germs are not dislodged from moist surfaces by currents of air. If all discharges were destroyed at the time of exit from the body, the greatest danger of communication from man to man would be removed.

It then follows, from what has been said, that tuberculosis is a distinctly preventable disease.

It is a well-known fact that some persons, and especially the members of certain families, are particularly liable to tuberculosis, and this liability can be transmitted from parents to children. So marked and so frequent is this liability, and so frequent is the development of the disease in particular families, that the affection has long been considered hereditary. We now know that tuberculosis can only be caused by the entrance of the germ into the body; and that this transmitted liability simply renders the individual a more easy prey to the living germs when once they have gained entrance.

The frequent occurrence of several cases of pulmonary tuberculosis in a family is, then, to be explained, not on the supposition that the disease itself has been inherited, but that it has been produced after birth by transmission directly from some affected individual. Where the parents are affected with tuberculosis the children from the earliest moments of life are exposed to the disease under the most favorable conditions for its transmission, for not only is the dust of the house likely to contain the bacilli, but the relationship also between parents and children, especially between mother and child, are of that close and intimate nature especially favorable for the transmission by direct contact.

If, then, tuberculosis is not inherited, the question of prevention resolves itself, principally, into the avoidance

of tubercular meat and milk, and the destruction of the discharges, especially the sputum, of tubercular individuals. As to the first means of communication, those measures of prevention alone answer the requirements which embrace the governmental inspection of dairy cows and of animals slaughtered for food, and the rigid exclusion and destruction of all those found to be tubercular.

For the removal of the second means of communication—*i. e.*, the sputum of tubercular individuals—the problem is simple when the patients are confined to their rooms or houses; then wooden or pasteboard cups with covers should always be at hand for the reception of the sputum. These cups are supported in simple racks, and at least once daily, or more frequently if necessary, should be removed from the racks and thrown with their contents into the fire.[1]

The disposition of the expectoration of persons who are not confined to their rooms or homes is a far more difficult problem. The expectoration certainly should not be discharged on the street, and the only practical means for its collection seems to be in handkerchiefs, which, when soiled, should at the earliest possible moment be soaked in a solution of five per cent. of carbolic acid and then boiled and washed. Handkerchiefs thus soiled are exceedingly dangerous factors in distributing tubercle bacilli; for when the sputum becomes dry, it is easily separated in flakes from the cloth and then soon becomes pulverized and suspended as dust.

It becomes evident from what has been said, that the means which will most certainly prevent the spread of this disease from one individual to another, are those of scrupulous cleanliness regarding the sputum. These means lie largely within the power of the affected individual. It is, furthermore, to be remembered that consumption is not always, as was formerly supposed, a fatal disease, but that it is in very many cases a distinctly curable affection.

An individual who is well on the road to recovery may, if he does not with the greatest care destroy his sputum, diminish greatly his chances of recovery by self-inoculation.

While the greatest danger of the spread of the disease from the sick to the well is in private houses and in hospitals, yet, if this danger is thoroughly appreciated it is, for the most part, quite under control, through the immediate destruction of the sputum and the enforcement of habits of cleanliness. But in places of public assembly, such as churches and theatres, particularly the latter, the conditions are different, and safety would seem to depend largely upon a dilution and partial removal of the floating and possibly dangerous dust by means of adequate ventilation.

Rooms in private houses and hospital wards that are occupied by phthisical patients should from time to time be thoroughly cleaned and disinfected, and this should always be done after they are vacated, before they are again occupied by other individuals.

Steamship companies should be obliged to furnish separate apartments for consumptive persons, so that no person in the exigencies of travel need be forced to share his room with one who might be a source of active danger to him.

We desire especially to emphasize the following facts:

1st. That tuberculosis is a distinctly preventable disease;

2d. That it is not directly inherited; and

3d. That it is acquired by the direct transmission of the tubercle bacillus from the sick to the healthy, usually by means of the dried and pulverized sputum floating as dust in the air.

The measures, then, which are suggested for the prevention of the spread of tuberculosis are:

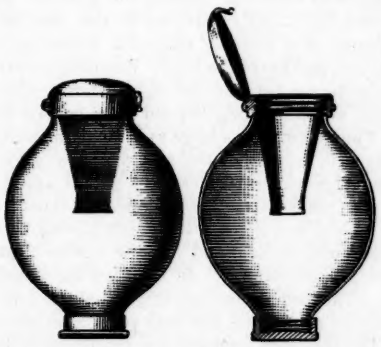
1st. The security of the public against tubercular meat and milk, attained by a system of rigid official inspection of cattle;

2d. The dissemination among the people of the knowledge that every tubercular person may be a source of actual danger to his associates, if the discharges from the lungs are not immediately destroyed or rendered harmless; and

3d. The careful disinfection of rooms and hospital wards that are occupied or have been occupied by phthisical patients.

HERMANN M. BIGGS,
T. MITCHELL PRUDDEN,
HENRY P. LOOMIS,
Pathologists to the New York City Health Department.

IN accordance with the principles of the prophylaxis of phthisis advanced by Dr. Cornet, DR. DETTWEILER, of Frankenstein, has designed the following pocket spit-cup or flask, which will obviate the necessity of expectorating either on the floor, or street, or into a handkerchief.



The flask, which is described in the *Therap. Monatshefte*, May, 1889, holds about three fluid-ounces. It is made of blue glass, and is flat. There are two openings, one at the top and one at the bottom; both have metallic screw-caps. The upper opening, which is the largest, has, in addition, a spring cover or cap, which closes tightly; also, a polished metal funnel, which reaches half-way down into the flask. This funnel acts similarly to that of certain ink bottles, and prevents the spilling of the contents of the flask, even if the cap is left open. The lower opening is designed to aid a thorough cleaning of the flask when necessary. The instrument can be sold at a cost of less than fifty cents, can be kept perfectly clean, closes securely, and is altogether admirably adapted to the requirements of consumptives.

[1] A cheap and efficient cup answering this purpose is now on the market and is supplied by druggists.

SOCIETY PROCEEDINGS.

AMERICAN LARYNGOLOGICAL ASSOCIATION.

Eleventh Annual Congress, held in Washington, D. C., May 30 and 31, and June 1, 1889.

THURSDAY, MAY 30TH.—MORNING SESSION.

THE PRESIDENT, DR. ETHELBERT CARROLL MORGAN, of Washington, called the Association to order, and delivered the

PRESIDENTIAL ADDRESS.

He welcomed the Association to the National Capital, and said that its noble work during its eleven years of existence has resulted in placing laryngology upon a substantial basis, and in demonstrating its truths and benefits alike to the profession and to suffering humanity. The outlook for laryngology was never brighter than at present. The tenth volume of the *Transactions* is now in press, and in addition to the papers read at the last meeting of the Association, contains a table of contents of all the papers read to the Association since its organization.

DR. E. CARROLL MORGAN then presented a

REPORT OF THE REMOVAL OF A SUPERNUMERARY TONSIL.

The patient, a male, æt. twenty-six years, vigorous, and otherwise healthy, came under observation September 7, 1886, with what he feared was malignant disease of the pharynx. The growth was first discovered four years previous. It had occasioned considerable pain, especially after smoking. During the past two months the growth had rapidly increased in size, and the pain had become of a shooting character, extending to the ears, larynx, and top of the head. Examination revealed a pendant tumor between the right palatine folds near the uvula, and protruding beyond their borders half an inch. The tumor was as large as a small almond. Its color, as well as that of the pillars, was a dusky red. Slight engorgement of the cervical glands appeared to exist. The patient's mother had died of cancer of the breast. Local and general treatment having no effect, the tumor was excised, and the raw surface cauterized with the galvano-cautery. In ten days the wound had healed. The patient was recently examined, and there has been no recurrence, now four years after the operation. The specimen removed was examined by Dr. W. M. Gray, Microscopist to the Army Medical Museum, who stated that its structure was identical with that of a faucial tonsil which had undergone hypertrophy. The location and microscopic characters of this tumor, as well as the history of the patient prior to and subsequent to the operation, prove that this was a hypertrophied accessory or supernumerary tonsil, an exceedingly rare anomaly. A search of the literature had revealed only two other cases of a similar character reported by Jurasz, in 1885. In the first case the tumor was as large as a hen's egg, and was found to spring from the lower anterior portion of the right posterior pillar by a small and short pedicle. It was removed, and found, on microscopic examination, to present the structure of a hypertrophied tonsil. In the second case the tumor was of the size of a hazel-nut, and attached below the right tubal prominence. The microscope revealed a structure similar to that of the faucial tonsil.

Conclusions.—1. The lymphoid follicles of the soft palate and pharynx are liable to be aggregated, resembling in arrangement the faucial tonsil. 2. The condition is exceedingly rare, since, excepting the so-called "pharyngeal tonsil," the author has found but one case reported. 3. These lymphoid follicles are also liable to hypertrophy. 4. Such hypertrophies probably occur oftener than is generally supposed. 5. The indications for operative interference in this condition are identical with those for the faucial tonsil.

DR. D. BRYSON DELAVAN, of New York, thought that possibly cases of supernumerary tonsil were not so infrequent as was commonly supposed. Pedunculated tumors of the tonsil which on examination show a fibroid structure are not rare, and it may be that they are degenerated supernumerary tonsils, just as the tonsil may, from long-continued inflammation, become the seat of fibroid change.

DR. GEORGE W. MAJOR, of Montreal, then read a paper on

THE RELATION BETWEEN FACIAL ERYSIPELAS AND ERYTHEMA, ON THE ONE HAND, AND INTRA-NASAL PRESSURE ON THE OTHER.

The following cases were cited as showing that facial erysipelas may be produced by nasal conditions, particularly when they are productive of pressure.

Case I.—A girl, aged twelve years, came under observation in March, 1884, for the treatment of nasal catarrh. There was a general hypertrophic condition, with pressure of the middle turbinated body of one side against the septum. On the cheek bone of the same side there was a red patch of erythema which had existed for five months. Treatment of the nasal condition by scarification, puncture, and galvano-cautery was followed by disappearance of the erythematous rash, and it has not returned.

Case II.—A child, four years of age, was seen in February, 1885, suffering with facial erysipelas, commencing on the bridge of the nose and extending to the cheeks. It had already lasted five days, and was not disposed to yield to treatment. Both nostrils were occluded by swelling. All treatment directed to the relief of the erysipelas was suspended, and attention directed to the relief of the nasal condition. In twenty-four hours the erysipelas had disappeared.

Case III.—In the winter of 1884, a boy, aged twelve years, the subject of recurring attacks of erysipelas, was seen with an attack involving the nose and cheeks. Nasal injections were alone used, and the erysipelas disappeared in thirty-six hours.

Case IV.—February, 1889, a female, aged fifty-six, presented herself with an erythematous patch on the left cheek. This had lasted four months. There was swelling of the left turbinated bone, which pressed against the septum. Under treatment of the nose the erythema disappeared in the course of a week.

Six other cases were alluded to, in which the same condition was seen.

DR. J. O. ROE, of Rochester, had seen a number of cases of erythematous rash due to the nasal trouble. A case recently seen was that of a girl, twenty-three years of

age. There was a very red erythematous patch on the face associated with blebs. She had been treated by various physicians without benefit. In both nares the middle turbinated bodies pressed firmly against the septum. This was relieved and there was immediately a subsidence of the erythematous trouble. He, however, could not admit that erysipelas is due *per se* to the intra-nasal trouble. He held that erysipelas is an infectious disease due to a distinct germ. The presence of erosions in the nasal cavity would render the patient more liable to become infected.

DR. J. N. MACKENZIE, of Baltimore, said that the relation between erythema of the nose and face and intra-nasal trouble had been recognized centuries ago in the times of Willis and by Sylvius. He himself had seen many cases of this kind, but he had never seen true erysipelas due to this cause. So-called facial erysipelas seems to be comparable to an accentuation of the act of blushing—a sort of chronic blush.

DR. WILLIAM H. DALY, of Pittsburg, was not a believer in the theory of intra-nasal pressure. The evils referred to pressure are really due to intra-nasal turgescence. The condition of erythema is nothing more than a condition of hyper-nutrition due to a permanently dilated and enlarged blood supply. He believed that the term chronic facial erysipelas is a misnomer.

DR. F. I. KNIGHT, of Boston, remarked that in these cases of erythema of the nose and face he always looked for nævus and very often found it. Where the trouble has been relieved, the affection of the skin has disappeared.

DR. D. BRYSON DELAVAN, had seen several of these cases, and in three or four the erysipelatous attacks have been severe. One case, a girl of seventeen years, had recurrent attacks of severe erysipelatous swelling from the alæ of the nose extending over the cheek. These recurred at intervals of two or three weeks. There was marked turgescence of the nasal mucous membrane. This was treated topically, and with the subsidence of the catarrhal trouble the attacks of erysipelas disappeared.

DR. SAMUEL W. LANGMAID, of Boston, then reported

A CASE OF ACUTE MULTIPLE ADENITIS (SEPTIC?) ŒDEMA OF THE LARYNX WITH SPONTANEOUS CURE.

He was called to see a lady, aged forty, who had been sick for seven days, under the care of an irregular practitioner. The patient was found restless, with an anxious expression, breathing with difficulty, and with a dry, croupy cough. There was no lividity of the face, but it was stated that during the preceding twenty-four hours there had been danger of strangulation. The submaxillary glands, as well as those in the region of the neck, were much swollen. Temperature 99°; voice fairly loud and clear; no enlargement of the tonsils; nothing unusual in the naso-pharynx. With the laryngoscope a tumor, apparently as large as a filbert, was seen occupying the posterior arytenoid space. The anterior third of the vocal cord could be seen approximated and scarcely moving during respiration. He learned that the throat had not been examined until four days after the commencement of the attack. As the patient was breathing fairly well it was decided to do nothing. If necessary, the tumor in the larynx was to be incised. A few hours later something was felt to break in the throat, and a free mucoid discharge took place. Three hours later, nothing could be seen but the erect epiglottis, with mucopurulent matter welling up. There was a continued discharge, but the relief to breathing was not complete. There had been, also, the discharge of half an ounce of pus. The discharge continued for several days, and the patient gradually recovered.

It was thought that the case was in all probability due to diphtheria, the evidences of which had passed away when the author examined the throat. The patient stated that at the commencement of the illness, the throat had been sore, and that on one side she had noticed red spots on which there had been a white covering.

DR. WM. C. GLASGOW, of St. Louis, read a paper on

AN ŒDEMATOUS FORM OF DISEASE OF THE UPPER AIR-PASSAGES.

He described an œdematous form of disease which had been epidemic around St. Louis for some two years. During the existence of this affection there has been a disturbance of the ordinary catarrhal throat troubles. In all cases of this disease there is found a pale, œdematous condition of the fauces. This is a solid œdema. A peculiar glistening appearance is at times very marked. In the majority of cases the soft palate is the seat of œdema. At times the nasal mucous membrane is found in the same condition. The epiglottis and different portions of the larynx may be involved. In some cases the true cords are markedly œdematous. A swollen condition of the veins, particularly the palatine veins, is present. This sometimes causes purpura-looking spots, and the mucous membrane appears mottled. In two cases these purpura-looking spots had been seen in the trachea. In one case enlarged veins were seen on the true cord. In some cases ulceration occurs. In some cases, in addition to œdema, there were patches of exudation in different parts of the throat. These when removed leave a bleeding surface. The symptoms of the disease and the appearance of the throat preclude the diagnosis of diphtheria. In six cases spots of mycosis were seen. Glandular enlargement of the neck is quite frequent. In two cases suppuration occurred.

The symptoms are constitutional and local. The affection occurs suddenly in persons of previous good health. There is langour, weakness, and general pains throughout the body. Headache is present, usually frontal, sometimes occipital. In many cases it is simply a dull heavy feeling, in others it is an intense violent throbbing pain. Pain in the back in the region of the sacrum is a characteristic symptom. Fever is present in varying degree. In the exudative cases, the disease commences with chill followed by fever, and the temperature may reach 105°. This soon passes off, and we have a subfebrile condition remaining, probably with a temperature of 101°. This continues a short time, and then there is a return to the normal temperature. When there is simply œdema, the temperature scarcely ever rises above 101° to 102°. This remains for only twelve hours, and during the remainder of the attack the temperature is normal. The pulse is always rapid, soft, and compressible; there has been no exception to this noted. The pulse ranges between 90 and 110 per minute. Profuse sweating is often present, especially during the night. It may be localized.

The local symptoms vary with the part of the throat

involved. Sometimes they are prominent, sometimes they are wanting. Hemorrhages are common; they are usually slight, but recur frequently.

This is a constitutional disease, due, the author believes, to some change in the blood, exactly what he was unprepared to say, but probably due to microörganisms. He thought that the disease described was nothing more than influenza, the same influenza which has been described so often, particularly by Graves. The disease has not been limited to the Mississippi Valley, for he had seen cases of it from all parts of the country.

The treatment is very simple. The system must be saturated with benzoate of sodium. Under this remedy the affection subsides in a few days or hours. If left to itself, it may continue for weeks and even months.

DR. WM. H. DALY had seen a number of cases similar to those described. He did not consider the condition as one of œdema, but rather as a subacute inflammatory condition of the mucous membrane. There was a sufficient number of these cases which had thin and superficial diphtheritic patches in various parts of the fauces to warrant him in considering the disease of a diphtheroid character. This view was confirmed by the subsequent occurrence of glandular enlargement in nearly all the cases.

DR. J. C. MULHALL, of St. Louis, confirmed the statements of Dr. Glasgow from his own experience with the disease in St. Louis, and reported a case in which the affection had recurred three times.

DR. S. H. CHAPMAN, of New Haven, had seen cases similar to those reported, but agreed with Dr. Daly that they were rather of a diphtheritic character. In one case the disease attacked a child of seventeen months. In the same family was a boy, nine years of age, with well-marked diphtheria. The first thing noted in the case of the child was a dense swelling of the submaxillary gland. There was great prostration, and some fever, 101°–102°. The swelling increased until it extended from the jaw to the clavicles. There was hoarseness and difficulty of breathing, which daily increased. By the seventh day it had increased so much that deep incisions were made into the gland, but no pus was found. A tube was then inserted into the larynx, and allowed to remain four days; the child during this time was kept alive by rectal alimentation. At the end of thirteen days the swelling began to diminish. The knife was again used, and a quantity of pus discharged. The child recovered.

DR. C. E. SAJOUS, of Philadelphia, referred to a case of this disease which occurred in a young man living on a farm in New Jersey, twenty miles from any neighbors, and who had not been exposed to diphtheria. The throat presented small white patches, resembling the yellowish leathery membrane seen in diphtheria. Slight œdema of the soft palate was also present. The temperature was high through the entire course of the disease. There was incessant pain in the back and in one limb. After trying a number of remedies, he was placed upon benzoate of sodium.

DR. GLASGOW remarked that he had, at first, regarded these cases as diphtheritic. In these cases the membrane is adherent. It can be torn away, but a bleeding spot is left. Applications made it worse. If left to itself, it gradually grows thinner and thinner, until it resembles a white pearly patch. Diphtheritic membrane does not pursue such a course. The glandular enlargements always occur, even when there is no exudation. He did not think that any one would assert that this œdema was diphtheria.

DR. W. H. DALY, of Pittsburg, then made some remarks based upon a few observations of the

INTIMATE RELATIONS OF CHRONIC DISEASE OF THE UPPER AIR TRACT AND NEURASTHENIA.

His experience had led him to believe that there was an intimate relation between conditions of the intranasal cavities and neurasthenia in some of its forms. This view was based upon the study of twenty-five cases. In these cases removal of the nasal trouble was followed by relief of the neurasthenic condition, no special treatment being directed to the general condition.

DR. J. O. ROE said that most of the members had seen many such cases, and they illustrate the effect that a constant local irritation will have upon the system. A constant nagging of a local irritant will sooner or later produce a depressed condition of the system.

DR. F. W. HINKEL, of Buffalo, remarked that before we could admit that neurasthenic condition could be the result of any nasal lesion as the sole cause, a careful analysis of all the constitutional conditions would be required.

DR. S.W. LANGMAID, of Boston, thought that often the nasal trouble was the result of the neurasthenia. It often happens that operative interference fails to relieve the nasal condition because neurasthenia is not cured.

DR. SAJOUS was inclined to support rather vigorously the view of Dr. Daly. In a number of cases he had observed that there were fluctuations in the nervous condition according as the local disease improved or became worse. In one case of neurasthenia associated with deviated septum, correction of the displacement was followed by improvement in the nervous condition. The operation, however, failed to be permanent, and with a return of the deviation the neurasthenic condition recurred, to disappear again with a more thorough operation upon the septum.

AFTERNOON SESSION.

DR. JOHN N. MACKENZIE read a paper on

SOME POINTS IN THE PATHOLOGY AND TREATMENT OF DISEASES OF THE NASAL PHARYNX.

The following conclusions were presented:

1. The nasal pharynx is in quite a large proportion of individuals exceedingly sensitive to reflex-producing stimulation.

2. The areas chiefly involved are the posterior portions of the turbinated erectile tissue, and various points along the upper and posterior portions of the nasal pharynx.

3. In consequence of this extreme sensitiveness, a local pathological process which in many persons would give rise to no reflex neuro-vascular changes may awaken a host of neurotic phenomena referable not only to the region primarily involved, but also to other and even remote organs of the body. These may include cough, asthma, and various neuralgic affections; or the local structural lesion may be the starting-point of various sympathetic affections of the respiratory tract.

4. That these classes of naso-pharyngeal neuroses are explicable on the same general principles laid down in

the article on neuroses of the nose, and the pathology of the nasal and post-nasal affections is, therefore, one and the same.

5. That the treatment should be carried out according to the general directions laid down in the article just mentioned.

6. That when morbid processes originate in the pharyngeal tonsil, attention should not be directed to the bursa alone, but an endeavor should be made to extirpate the tonsil as far as possible in its entirety.

7. That while a favorable prognosis cannot be safely predicted by treatment of the bursa alone, extirpation of the pharyngeal tonsil often affords a most favorable prospect in long-standing cases of post-nasal trouble.

DR. D. BRYSON DELAVAN then presented some

OBSERVATIONS UPON THE CONDITION KNOWN AS ADENOID HYPERTROPHY AT THE VAULT OF THE PHARYNX, AND THE METHODS USED FOR ITS REMOVAL.

A case was described in which with each acute attack of catarrhal trouble there would be enlargement of the adenoid tissue of the vault of the pharynx, forming a large tumor. When the attack passed away the hypertrophy disappeared. The author then referred to the methods of operation and the accidents which might occur. As the operation was attended with considerable pain he suggested the employment of anæsthesia. He had in a number of cases employed chloroform with satisfactory results, the object being to avoid the profuse mucoid secretion which is apt to follow the use of ether. Where chloroform is used the operation is performed with the patient on his back.

DR. F. H. HOOPER, of Boston, reported a case of a young lady who came to him with acute coryza and in whom he found a large-sized adenoid of the vault. After the attack subsided, the adenoid almost entirely disappeared. In order to avoid error, the post-nasal probe should be always used. With it conditions not apparent to the eye may be recognized. He had never seen serious hemorrhage follow operations for the removal of the tissue. In operating he first removes all that is possible with the post-nasal forceps and completes the removal with the finger-nail. He had never used chloroform. The amount of secretion after the use of chloroform varies very much in different cases.

DR. HARRISON ALLEN, of Philadelphia, advocated the use of the finger as a means of detecting these post-nasal affections. To examine the case thoroughly requires the use of an anæsthetic. In the treatment of adenoid hypertrophy, it is better to remove all the diseased tissue at one sitting under ether than to remove it in portions at different times.

DR. J. C. MULHALL held that for practical purposes the pathology of the pharyngeal tonsil was exactly the same as that of the faucial tonsil. In operating, he had applied cocaine thoroughly to the pharyngeal wall and soft palate to avoid the disagreeable sensation caused by the scraping of the forceps against the healthy pharyngeal wall, and had succeeded very well.

DR. F. I. KNIGHT related a case of acute hypertrophy of the faucial tonsil in which the surgeon performed tracheotomy preparatory to removing the tumor. When he came to operate he found that the growth had disappeared.

DR. WILLIAM E. CASSELBURG, of Chicago, referred to the importance of thoroughly eradicating these growths. In two cases in which portions of the mass had been left, the reflex symptoms, while greatly lessened, continued to recur. In two cases he had attempted to use the mirror during operation. To do this he pulled the soft palate forward by two rubber bands, passing through each nostril. In one case he succeeded to a certain extent, but in the other failed. This procedure, however, greatly facilitated the operation. In order to prevent the passage of blood into the larynx he was in the habit of bending the head forward at intervals in order to allow the escape of the blood.

DR. J. N. MACKENZIE, as a rule, operates without anæsthesia, removing a portion of the mass every day or every other day, continuing the operation for a week or ten days. He had seen very little pain from the operation. There is one point in regard to the nature of this so-called adenoid. He had examined a number of these growths under the microscope and they do not differ from papillomatous growths. There is also in addition a true adenoid growth; this is more difficult of removal than the former.

DR. F. H. HOOPER read a paper on

EXPERIMENTAL METHODS OF STUDYING THE ACTIONS OF THE INTRINSIC MUSCLES OF THE LARYNX.

He exhibited the apparatus which he had employed in studying the effect of stimulation upon the internal thyro-arytenoid, the lateral crico-arytenoid, and posterior crico-arytenoid muscles. The larynx of a dog is quickly excised, the mucous membrane removed, and the muscles subjected to electrical stimulation.

DR. F. I. KNIGHT then read a paper on

DYSPHONIA SPASTICA.

He briefly reported the four cases of this affection which he had seen in the last seven years. He regarded the condition as rare; there is probably a spasmodic action of the muscles of phonation, or respiration, or both, giving rise to a high-pitched, jerking voice. The prognosis is unfavorable. The object of the paper was to elicit reports of other cases.

DR. G. W. MAJOR had seen one case of aphonia spastica and two cases of dysphonia spastica. In none of the cases was benefit obtained by treatment.

DR. S. W. LANGMAID had reported one case in which treatment was unsuccessful. The patient, when he had to use his voice, prescribed for himself a little whiskey, and this answered temporarily. There seems to be no change in the voice since the affection first came on, fifteen years ago.

DR. DELAVAN said that in one case coming under his observation the patient was able to talk tolerably well after fortifying himself with a stimulant. This patient seemed to improve under local treatment to the larynx and vocal training, but the treatment could not be continued.

DR. C. E. BEAN, of St. Paul, had seen one case two years ago. Various methods of treatment had been employed without benefit. The voice is now the same as at the commencement.

DR. RUFUS P. LINCOLN, of New York, read a paper on

RECURRENT LARYNGEAL GROWTH.

The patient had come under the care of the late Dr. Elsberg, twenty-four years ago. Dr. Elsberg first operated by the intro-laryngeal method, but could not remove the growth. Twenty-two years ago he did laryngotomy and removed the growth. The microscopical examination made at that time was unsatisfactory. There was no further trouble until a short time ago, when the growth recurred. Dr. Lincoln recently removed the tumor, which on microscopical examination proved to be a papilloma.

NEW YORK ACADEMY OF MEDICINE.

SECTION IN LARYNGOLOGY AND RHINOLOGY.

Stated Meeting, March 26, 1889.

C. C. RICE, M.D., CHAIRMAN.

DR. T. W. CORWIN, of Newark, N. J., presented a case of

HYPEROSTOSIS OF THE FACIAL BONES INVOLVING BONY OCCLUSION OF THE ANTERIOR NARES.

The literature of such bony occlusion is very scanty. Nevertheless, considerable attention has been paid to this subject recently in connection with cases reported by Drs. Potter, Hubbell, Pomeroy, Jarvis, C. M. Knight, Weir, and others. In all, about twenty cases have been collated. The majority of these have affected only the posterior nasal orifices.

The two cases reported by Dr. Jarvis are the only ones involving the anterior portions of the nasal fossæ. The author has carefully examined the literature of the subject by English-speaking observers and finds no other instances of anterior bony occlusion of this type.

Bony occlusions have been classified according to their origin as septal, turbinal, and palatal. The case here reported appears to be of turbinate origin. The lesion involves both sides symmetrically and has the following history:

Mary A. B., nativity United States, single. She was referred to Dr. Corwin for examination about February 1, 1889, by Dr. T. Y. Sutphen, Surgeon to the Eye and Eye Department of St. Michael's Hospital, Newark, N. J., who had treated her for acute catarrh of the left lachrymal duct, epiphora, etc., with relief. She presented a peculiar physiognomy. The frontal, malar and inferior maxillary bones were prominent, while the nose was but slightly developed and the central portion of the face had but little fulness. The mouth was constantly held slightly open. The features were symmetrical, excepting greater depth of the right eyeball. Examination of the anterior nares revealed complete occlusion upon the left side and nearly complete occlusion of the right side. The vestibules were normal. Slightly back of the vestibule of the left side, at the normal site of the inferior turbinate, the canal was closed by a wall springing from the outer side which curved inward and slightly backward and met the septum at an acute angle. Above, this led to a closed canal, along which a small probe was admitted to the pharnyx over a bony mass about one and three-quarters inches in length.

Upon the right side the canal was much larger and corresponded to the normal condition of the organ above the inferior turbinate. This canal was pervious and permitted difficult respiration with râles. The probe traced the obstruction to the same extent backward as upon the left side and gave it the same characters. The mouth is normal. There is no labial hypertrophy. The palatal arch is not unusually high. The upper teeth are mostly absent and are replaced by an artificial set. The inferior maxilla is very large in every direction and gives a massive appearance. It is about three-fourths of an inch in thickness. The velum palati approximates considerably to the post-laryngeal wall. On rhinoscopic examination, the post-nasal space is short from front to back. Only the upper half of the choanæ were seen by the mirror, and these were normal.

By palpation the palate bones presented no deviation, but the Eustachian tubes were large and completely ossified.

No other anomalies were found excepting retraction of the lower part of the sternum. The heart and lungs were normal. There is general chronic pharyngitis and naso-pharyngitis.

Sight normal. Hearing good. Olfaction unimpaired. Nasal respiration was but fractional and permitted upon the right side only. There was constant mouth breathing, frequent sneezing, and during sleep loud snoring. The voice is husky, with loss of the upper tones and of nasal resonance.

Excepting two sisters, the remainder of the family of nine members died during her childhood. No details can be obtained. Both sisters are healthy.

Patient knows of no illnesses in childhood, excepting measles and whooping-cough, but, as far as her memory extends, she has had difficulty in breathing through the nose, which has been progressive. Suckling is said to have been normal.

She has been much subject to colds, had pneumonia when thirteen years of age, and again a year later; some years afterward a severe bronchitis, and a third attack of pneumonia five years ago.

Treatment.—Partial and temporary relief was had from cocaine and Dobell's solution. About May 1st she was operated upon by Dr. Rice at his clinic. With the electro-trephine a channel of one-fourth inch diameter was made through the bone upon the right side. No irritation followed.

DR. KNIGHT said that his own observation has been in connection with obstruction in the posterior nares, which seems to be of a different character from this. His cases were due to thickening and distortion of the palatal bone. The treatment in one was by the electric trephine, and was successful as regards obstruction of respiration. There is one feature with regard to this case which struck him as remarkable, and that is the very slight impairment of function associated with this deformity, which we should naturally expect to be considerable in such cases. There was but little disturbance of any of the functions, except the sense of smell, in his cases. There was diminished hearing distance in the ear on the side of the affected nostril, but breathing was free enough through the other nostril.

DR. S. T. ARMSTRONG then read a paper on

LARYNGEAL VERTIGO.

(See p. 624.)

DR. L. C. GRAY said that he thought this the best paper upon the subject of laryngeal vertigo which he had ever had the pleasure of hearing or reading. The first case upon this side of the water was, he believed, reported by himself. This was some years ago, and he had not seen a case since. He did not know that there were so many cases upon record. But the term vertigo seemed to him a misnomer, for, as it is used by the American and English authors, it does not mean a loss of consciousness, but only a faintness, a dizziness, a swimming, a seeming loss of equilibrium, without any more than the faintest shadow of an obscuration of consciousness.

There are many important clinical reasons why we should keep the term vertigo distinct in its meaning from anything that implies a loss of consciousness. He had suggested the term epilepsy because the loss of consciousness in these cases is a genuine one, and because, in some patients, the loss of consciousness has been attended with tonic or clonic convulsions. His experience is, that when a person gets into the habit of losing consciousness, he is very apt to keep up the habit, and it is very difficult to break him of it, unless the loss of consciousness is a mere faint, as it occurs in some women, or unless it is associated with migraine, or some organic visceral disease. Whenever losses of consciousness are set up by disease of the central or peripheral nervous structure, whether that disease be organic or functional in its nature, that loss of consciousness is, so far as our present knowledge goes, of the nature of what we call by the generic name of epilepsy. It has not been established yet that the removal of an irritating cause will break up the epileptic habit, and it has not been proven that the removal of the irritating causes in cases of this kind will have any more effect. Temporary cessation of losses of consciousness does not, by any means, imply abolition of them, for they may be absent for months, or even years, and then return in full vigor. The word syncope has been suggested as a better term, but this is a great deal more than a syncope. It is a full loss of consciousness.

The case that he reported some years ago, that Dr. Armstrong referred to in his paper, still has occasional attacks, at least he did about a year ago when Dr. Gray last saw him.

DR. W. R. BIRDSALL had listened with a great deal of interest to the paper, and the main question in his mind, the one he would like to ask is, How are these cases related to the so-called laryngeal crises of locomotor ataxia? The cases of so-called larygeal vertigo are so few that he had his doubts where we ought to classify them.

A case came to mind that he observed several years ago, in which a patient affected with posterior spinal sclerosis related a distinct history of so-called laryngeal crises; but of such a violent type that he lost consciousness for a moment. He was seen by him at Manhattan Hospital, and was referred to the throat department, where they found a slight enlargement upon one of the vocal cords, which disappeared under treatment after a few weeks, and for a long period he had no more of these attacks. Then he came to him again, reporting that he had had an attack, and attempting to look at his larynx provoked one of his attacks, the only attack of so-called laryngeal vertigo he had ever seen; he never cared to repeat the experiment with him. The man apparently fainted, said that for a moment he lost consciousness. His face became very blue, there was evidently a good deal of laryngeal spasm at first. The description of these cases of laryngeal vertigo seemed to him very much like those of laryngeal crises or spasms which occur in locomotor ataxia.

Dr. Gray's way of looking at the subject is a plausible one. A certain number of these cases may possibly be epileptic, yet we know how readily loss of consciousness is produced. It seemed to him that the future may show that we have quite a variety of causes and conditions to account for such attacks.

DR. C. L. DANA said that the paper suggested to him much the same observations as those made by Dr. Birdsall, viz., the resemblance of these cases to the laryngeal crises of locomotor ataxia. He had recently had a patient with normal heart who suffered from such crises, during which there was great dyspnœa, rapid heart action, and disturbance of consciousness, and other evidence of involvement in the vagus and spinal accessory nerves. If these nerves were functionally and organically affected in locomotor ataxia, they might be also affected in other morbid conditions.

DR. S. T. ARMSTRONG said that, in regard to the remarks of Dr. Birdsall, Ferrial has made the same comparison of the laryngeal symptoms. The fact that in laryngeal vertigo nearly all the cases reported, except the one by Dr. Gray, have recovered, would show that they are simply temporary impairments of the function of the superior laryngeal nerve. Very possibly, it is the same fundamental principle at issue in each case. There is certainly, in the laryngeal crises, in tabes dorsalis, a much more powerful impression created, and symptoms of longer duration, than in laryngeal vertigo.

NEWS ITEMS.

Risks of an Outbreak of Yellow Fever this Summer.—Dr. Jerome Cochran, State Health Officer of Alabama, has just returned from an extensive trip through South Florida and Havana, made to investigate the yellow fever situation and obtain information as to the prospects of a fresh outbreak of the disease during the approaching summer. In an interview with the Associated Press as to the result of his trip, Dr. Cochran said:

"I am satisfied there has been no yellow fever in Jacksonville, Fla., since January last. A death from yellow fever was officially reported at Sanford, Fla., about the middle of April, but although six weeks have elapsed there have been no subsequent cases there. I visited the towns on the Manatee River, being specially interested in the Manatee country, because the people ship their farm and garden products to Mobile, and get their supplies from Mobile. I found no yellow fever in any of the Manatee towns. A suspicious case was reported at Palmetto a few weeks ago, but I saw the patient with the health officer of Florida, and we found that it was not yellow fever. The last case at Palmetto, which is one of the Manatee towns, occurred last November.

"I visited Havana and found very little yellow fever there, the average being fifteen or twenty cases a week, which is unusually light, considering that this is the epidemic season in Havana. Everywhere in South Florida and Cuba the health of the people was reported to be exceptionally good. The whole country is suffering from

drought, no rain having fallen in many weeks. The vegetable crops have been considerably damaged, and the people fear the orange crop will be cut off, but the health of the people is unusually good."

When asked what he thought about the prospects for an outbreak of fever this summer, Dr. Cochran said:

"I am entirely satisfied that there has been no yellow fever in Florida except the one solitary case reported at Sanford, since last January. There has been a very general feeling of apprehension among the health authorities of the Southern States that yellow fever might have lived through the mild winter in Florida, and might break out afresh during this summer. It is impossible to make any confident prediction, but I am inclined to believe that there will not be any fresh outbreak in Florida this year, unless there is a fresh importation of the disease."

Vital Statistics and the next Census.—Hon. Robert P. Porter, Superintendent of Census, has issued the following card to the medical profession:

"The various medical associations and the medical profession will be glad to learn that Dr. John S. Billings, Surgeon U. S. Army, has consented to take charge of the Report on the Mortality and Vital Statistics of the United States as returned by the Eleventh Census.

"As the United States has no system of registration of vital statistics, such as is relied upon by other civilized nations for the purpose of ascertaining the actual movement of population, our census affords the only opportunity of obtaining near an approximate estimate of the birth and death rates of much the larger part of the country, which is entirely unprovided with any satisfactory system of State and municipal registration. In view of this, the Census Office this year will issue to the medical profession throughout the country 'Physician's Registers' for the purpose of obtaining more accurate returns of deaths than it is possible for the enumerators to make. It is earnestly hoped that physicians in every part of the country will coöperate with the Census Office in this important work. The record should be kept from June 1, 1889, to May 31, 1890. Nearly 26,000 of these registration books were filled up and returned to the office in 1880, and nearly all of them used for statistical purposes. It is hoped that double this number will be obtained for the Eleventh Census.

"Physicians not receiving Registers can obtain them by sending their names and addresses to the Census Office, and, with the Register, an official envelope, which requires no stamp, will be provided for their return to Washington.

"If all medical and surgical practitioners throughout the country will lend their aid, the mortality and vital statistics of the Eleventh Census will be more comprehensive and complete than they have ever been. Every physician should take a personal pride in having this report as full and accurate as it is possible to make it.

"It is promised that all information obtained through this source shall be held strictly confidential."

Canned Meats.—*The American Grocer* referred some recently reported cases of supposed poisoning by canned meats, which occurred in Elizabeth, Plainfield, and Kearney, New Jersey, to Dr. W. K. Newton, M.D., Food Commissioner of the State, for investigation, and he reports that the Kearney and Elizabeth cases, 19 in all, were poisoned by putrefactive changes in corned beef which had not been canned, and the two Plainfield cases were caused by canned salmon which emitted a hissing sound when the knife cut through the tin, showing that its conrents were imperfectly preserved, and that fermentation had started.

The Popularity of Cremation.—Since the report of the Society for Cremation up to the first of last August, there have been 998 cremations in Italy, 287 in America, 554 in Gotha, 16 in England, 39 in Sweden, 7 in France, and 1 in Denmark, making a total of 1902.—*Revue Gén. de Clin. et de Thèr.*, May 2, 1889.

Corrigendum.

Page 585, second column, fifteenth line, *for* "oxygen" *read* "ozone."

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM MAY 28 TO JUNE 3, 1889.

By direction of the Secretary of War, JOHN S. BILLINGS, *Major and Surgeon*, is authorized to make, in connection with his duties as Supervisor of Mortality and Vital Statistics of the Eleventh Census, such journeys as may be ordered by the Superintendent of the Census, provided that, in each case, the approval of the Surgeon-General shall be obtained; and provided further, that the journeys shall involve no charge against the fund for transportation of the Army.—Par. 12, *S. O. 122, A. G. O.*, May 27, 1889.

By direction of the Secretary of War, leave of absence for six months, on account of sickness, is granted to PAUL R. BROWN, *Captain and Assistant Surgeon.*——Par. 3, *S. O. 122, A. G. O.*, May 27, 1889.

The resignation of GEORGE F. WILSON, *Captain and Assistant Surgeon*, was accepted by the President, and took effect May 31, 1889.

FISHER, WALTER W. R., *Captain and Assistant Surgeon.*—The leave of absence for one month, granted by S. O. No. 30, *c. s.*, Department of California, is extended fifteen days.—Par. 3, *S. O. 37, Headquarters Division of the Pacific, San Francisco, California*, May 22, 1889.

By direction of the Acting Secretary of War, JAMES D. GLENNAN, *First Lieutenant and Assistant Surgeon*, is relieved from duty at Willett's Point, New York, to take effect June 1, 1889, and will proceed to Fort Riley, Kansas.—Par. 5, *S. O. 121, A. G. O.*, May 5, 1889.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE-HOSPITAL SERVICE, FOR THE TWO WEEKS ENDING MAY 25, 1889.

HUTTON, W. H. H., *Surgeon.*—To proceed to New Orleans, Louisiana, and inspect unserviceable property, May 25, 1889.

PURVIANCE, GEORGE, *Surgeon.*—Detailed as Chairman of the Board of Examiners, May 22, 1889.

AUSTIN, H. W., *Surgeon.*—Detailed as a member of the Board of Examiners, May 22, 1889.

GODFREY JOHN, *Surgeon.*—Detailed as Recorder of the Board of Examiners, May 22, 1889.

GUITÉRAS, JOHN, *Passed Assistant Surgeon.*—Resignation accepted, by direction of the President, as tendered, to take effect April 30, 1889, May 11, 1889.

ARMSTRONG, S. T., *Passed Assistant Surgeon.*—Granted leave of absence for thirty days, May 11, 1889.

THE MEDICAL NEWS *will be pleased to receive early intelligence of local events of general medical interest, or of matters which it is desirable to bring to the notice of the profession.*

Local papers containing reports or news items should be marked.

Letters, whether written for publication or private information, must be authenticated by the names and addresses of their writers—of course not necessarily for publication.

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